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1847-
1851

ANNUAL REPORT

OF THE

113
New York. State Museum, Albany

REGENTS OF THE UNIVERSITY,

ON THE

Condition of the State Cabinet

OF

NATURAL HISTORY.

WITH

CATALOGUES OF THE SAME.

Reports.
1-5

Made to the Senate April 11, 1848.

ALBANY:
C. VAN BENTHUYSEN, PRINTER.
1848.

REPORT

Of the Regents of the University, on the State Cabinet of Natural History.

TO THE LEGISLATURE OF THE STATE OE NEW-YORK.

The Regents of the University, to whom was committed the care of the "State Cabinet of Natural History," by virtue of an act passed May 10, 1845,

Respectfully Report:

That on the reception of the act passed May 3, 1847, which appropriated annually the sum of one hundred and fifty dollars, for the years, 1847–8, for preserving and increasing the collections, and for defraying the incidental expenses of the same, they took the necessary measures for complying with its provisions. A small but important addition has been made to the collection of native Birds; and the remainder of the sum granted has been employed in the erection of cases, and in the payment of necessary incidental expenses. A statement of the drafts made on the Treasurer is annexed to this report, and marked A.

The amount annually appropriated is so small, that it will be difficult to supply with it the existing deficiencies, particularly in the Zoological department, under a number of years. It is respectfully submitted, whether a somewhat larger amount might not be usefully employed.

The State Cabinet is visited by thousands during the course cf the year, and we have just reason to be proud of the ample and interesting portion which constitutes the Geological and Mineralogical Collection. A high authority, Professor Agassiz, has recently stated before a public assemblage in this city, that it is the only Geological Museum in the United States. This commendation, from a competent judge, cannot fail to lead our fellow citizens properly to appreciate its value.

It must however be in a measure sealed to all its visiters, unless accurate catalogues be prepared of the various departments. The Regents have not been unmindful of this, and have urged on the gentlemen formerly and at present constituting the geological corps, an early and prompt attention to it. They now forward to the Legislature,

1. A list of the Quadrupeds and Birds in the collection, designating with an asterisk those added during the last year, and to the date of this report.

2. A catalogue of the specimens in the Mineralogical department of the Geological Survey; prepared by LEWIS C. BECK, M. D., late Mineralogist to the same.

3. A catalogue of specimens of the Crystalline and Metamorphic rocks in the State Geological Collection; prepared by JAMES HALL.

4. A catalogue of specimens in the State Geological Collection from the Potsdam sandstone, calciferous sandstone, Chazy limestone, birdseye limestone, Black River limestone, Trenton limestone, Utica slate and Hudson River group; prepared by JAMES HALL.

5. A catalogue of specimens in Palæontology, from the above series of rocks; prepared by JAMES HALL.

The Regents respectfully suggest the utility of having an additional number of copies of these catalogues printed for the use of this and succeeding Legislatures, and for judicious distribution among such as take an interest in the collection, or who may be desirous of studying its contents.

The Curator also reports a list of donations during the last year which is hereunto annexed, marked B.

All which is respectfully submitted,
By order of the Regents of the University.
PETER WENDELL, *Chancellor.*
T. ROMEYN BECK, *Secretary.*

April 11, 1848.

(A.)

The Regents of the University, in account current with the appropriation made for 1847, *towards preserving and increasing the collection in the* " State Cabinet of Natural History," *and for defraying the incidental expenses of the same.*

	Dr.	
	By amount of said appropriation,	$150 00

1847.	Cr.	
July 3,	By expenses of remounting birds in the collection, perches, wire, paint, &c.,	$12 75
" 26,	By cash paid John G. Bell, for 49 specimens of birds stuffed,	75 00
" 27,	By cash paid Wm. Gillespie, for erecting cases for the same,	18 00
Oct. 23,	By cash paid Weed & Parsons, for printing 369 pasteboard labels, all different,	25 00
	By cash paid for transportation of birds from New-York,	63
Nov. 1,	By cash paid for a table and chairs, alcohol for specimens, stationery, and other incidentals,	13 00
		$144 38

(B.)

Donations to the State Cabinet of Natural History, during 1847.

SPECIMENS OF BIRDS.

From Professor HOPKINS, of Auburn—A *Nighthawk.*
T. ROMEYN BECK—*American Bittern*, taken at Lake George.
T. C. HENRY, of Troy—*Pectoral Sandpiper, House Wren.*
J. W. TAYLOR—*Golden Oriole, Lapland Snowbird.*

MINERALS.

From Mr. ALLEN, of Cayuga; Mr. HOWE, of Schoharie; Mr. ANGEL, of Allegany; Mr. BARTON, of Essex; Mr. MILLER, of Schoharie, Mr. PETERS, of Allegany; and Mr. LITTLE, of Otsego.

A pair of *Elk* horns, from Mr. KING, of Waterford.

Mr. JOHN F. JENKINS, of North Salem, Westchester county, has also presented his map of that town to the Antiquarian and Historical Collection, which the Regents are endeavoring to form.

CATALOGUE

OF THE

MAMMALIA AND BIRDS,

IN THE

State Cabinet of Natural History.

April 11, 1848.

MAMMALIA.

ORDER CARNIVORA.

FAMILY SORECIDÆ.

		Zoology—Part I.
Scalops aquaticus,	*Common Shrew Mole.* - - - -	p. 15

FAMILY URSIDÆ.

Ursus americanus,	*American Black Bear.* - - - -	24
Procyon lotor,	*Raccoon.* - - - - - - - -	26

FAMILY MUSTELIDÆ.

Mephitis americana,	*Skunk.* - - - - - - - -	29

FAMILY FELIDÆ.

Felis concolor,	*Northern Panther.* - - - - -	47

FAMILY PHOCIDÆ.

Phoca concolor,	*American Seal* (young). - - -	53

ORDER RODENTIA.

FAMILY SCIURIDÆ.

		Zoology—Part I.
Sciurus vulpinus†,	*Fox Squirrel.*	p. 59
Sciurus niger,	*Black Squirrel* (an albino)‡.	60
Sciurus hudsonicus,	*Red Squirrel.*	61

There are a few other specimens, but so imperfect or injured, as not to deserve a place in the catalogue, and they will be replaced as soon as possible.

*Horns of the Elaphus canadensis (*Elk*)‖. - - - - - . - 118

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† See the remarks of De Kay, at page 60.

‡ Presented by Jephtha R. Simms, of Schoharie.

‖ Presented by Mr. King, of Waterford.

BIRDS.

ORDER ACCIPITRES.

FAMILY VULTURIDÆ.

		ZOOLOGY—Part II.
CATHARTES AURA,	*Turkey Buzzard.*	p. 2

FAMILY FALCONIDÆ.

HALIAETOS LEUCOCEPHALUS,	*Brown,* or *Bald Eagle.*	5
PANDION CAROLINENSIS,	*American Fish Hawk.*	6
BUTEO SANCTI-JOHANNIS,	*Rough-legged Buzzard.*	7
*BUTEO BOREALIS,	*Red-tailed Buzzard* (male).	9
BUTEO HYEMALIS,	*Red-shouldered Buzzard.*	10
*BUTEO PENNSYLVANICUS,	*Broad-winged Buzzard.*	11
FALCO ANATUM,	*Duck Hawk.*	13
FALCO COLUMBARIUS,	*Pigeon Hawk.*	15
FALCO SPARVERIUS,	*American Sparrow Hawk.*	16
ASTUR FUSCUS,	*Slate-colored Hawk.*	17
ASTUR COOPERI,	*Cooper's Hawk.*	19

FAMILY STRIGIDÆ.

SURNIA NYCTEA,	*Snow Owl.*	22
BUBO VIRGINIANUS,	*Great-horned Owl.*	24
*BUBO ASIO,	*Little Screech Owl* (male & fem.).	25
OTUS AMERICANUS,	*Long-eared Owl.*	27
OTUS PALUSTRIS,	*Short-eared Owl.*	28
*ULULA NEBULOSA,	*Barred Owl* (male).	29
ULULA ACADICA,	*Acadian Owl.*	30

ORDER PASSERES.

FAMILY CAPRIMULGIDÆ.

		Zoology—Part II.
*Chordeiles americanus,	*Nighthawk*†.	p. 34

FAMILY HIRUNDINIDÆ.

Chætura pelasgia,	*Chimney Swallow.*	35
Hirundo purpurea,	*Purple Martin.*	37
Hirundo bicolor,	*White-bellied Swallow.*	38
Hirundo riparia,	*Bank Swallow.*	39
Hirundo rufa,	*Barn Swallow.*	40
*Hirundo fulva,	*Cliff Swallow.*	41

FAMILY AMPELIDÆ.

Bombycilla carolinensis,	*Cedarbird.*	44

FAMILY ALCEDINIDÆ.

Alcedo alcyon,	*Belted Kingfisher.*	45

FAMILY TROCHILIDÆ.

*Trochilus colubris,	*Red-throated Hummingbird* (male & f.).	46

FAMILY CERTHIDÆ.

*Sitta carolinensis,	*White-breasted Nuthatch* (male).	48
Sitta canadensis,	*Red-bellied Nuthatch.*	49
Certhia americana,	*Brown Creeper.*	50
Mniotilta varia,	*Varied Creeping Warbler.*	52
*Troglodytes ædon,	*House Wren*‡.	53
Troglodytes ludovicianus,	*Mocking Wren.*	55
Troglodytes palustris,	*Marsh Wren.*	56
*Troglodytes hyemalis,	*Winter Wren.*	57

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† Presented by Professor Hopkins, of Auburn.

‡ Presented by T. C. Henry, of Troy.

FAMILY PARIDÆ.

		Zoology—Part II.
Parus bicolor,	*Crested Tit* (male & female).	p. 59
*Parus atricapillus,	*Black-cap Tit* (male & female).	60

FAMILY SYLVIADÆ.

*Regulus satrapa,	*Golden-crested Kinglet* (male).	62
*Regulus calendula,	*Ruby-crowned Kinglet* (male).	64
Sialia wilsoni,	*Bluebird.*	65

FAMILY MERULIDÆ.

Orpheus polyglottus,	*Mockingbird.*	67
Orpheus rufus,	*Brown Thrush.*	68
Orpheus carolinensis,	*Catbird.*	69
Merula migratoria,	*American Robin.*	70
*Merula migratoria,	(An albino) *American Robin*†.	—
Merula mustelina,	*Wood Thrush.*	71
Merula solitaria,	*Hermit Thrush.*	72
Merula olivacea,	*Olive-backed Thrush.*	73
Merula wilsoni,	*Wilson's Thrush.*	74

FAMILY MOTACILLIDÆ.

*Seiurus noveboracensis,	*New-York Water Thrush* (male).	78
Seiurus aurocapillus,	*Ovenbird.*	79

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*Trichas marylandica,	*Yellow Throat* (female).	80
*Vermivora solitaria,	*Blue-winged Warbler* (male & fem.).	83
*Vermivora chrysoptera,	*Golden-winged Warbler* (male).	84
Vermivora rubricapilla,	*Nashville Warbler.*	86
Sylvicola coronata,	*Myrtlebird* (male).	88
Sylvicola maculosa,	*Spotted Warbler* (male).	90
Sylvicola pardalina,	*Spotted Canada Warbler.*	91
*Sylvicola cærulea,	*Blue-grey Warbler* (male).	92
Sylvicola blackburniæ,	*Blackburnian Warbler* (male).	93
Sylvicola castanea,	*Bay-breasted Warbler.*	94

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† Presented by Charles Nott.

*Sylvicola americana, *Blue Yellow-backed Warbler* (male). p. 97
Sylvicola canadensis, *Black-throated Blue Warbler* (male). 98
Sylvicola æstiva, *Summer Yellowbird* (female). - - 99
*Sylvicola pinus, *Pine Warbler* (male). - - - - 101
*Sylvicola icterocephala, *Chesnut-sided Warbler* (male). - - 102
*Sylvicola formosa, *Kentucky Warbler* (male). - - - 105
*Wilsonia mitrata, *Hooded Warbler* (male & female). 107
*Wilsonia pusilla, *Green Black-capped Warbler* (male). 108

FAMILY MUSCICAPIDÆ.

Muscicapa ruticilla, *American Redstart* (male). - - - 111
*Muscicapa flaviventris, *Yellow-bellied Flycatcher* (male). - 113
*Muscicapa virens, *Wood Pewee.* - - - - - - - 114
Muscicapa fusca, *Phœbebird.* - - - - - - - - 115
Tyrannus intrepidus, *Kingbird.* - - - - - - - - 117
*Tyrannus cooperi, *Olive-sided Kingbird.* - - - - 118
*Tyrannus crinitus, *Great-crested Kingbird* (male). - 119

FAMILY VIREONIDÆ.

Vireo flavifrons, *Yellow-throated Greenlet.* - - - 120
Vireo solitarius, *Solitary Greenlet.* - - - - - - 121
*Vireo noveboracensis, *White-eyed Greenlet* (male). - - 122
Vireo gilvus, *Warbling Greenlet.* - - - - - 123
Vireo olivaceus, *Red-eyed Greenlet.* - - - - - 124
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FAMILY LANIIDÆ.

*Lanius septentrionalis, *Northern Butcherbird* (male). - - 127

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*Garrulus cristatus, *Blue Jay* (male). - - - - - - 129
Garrulus canadensis, *Canada Jay.* - - - - - - - 130
*Pica caudata, *Magpie* (male). - - - - - - 131
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		Zoology—Part II.
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*ICTERUS BALTIMORE,	*Golden Oriole* (male & female)†.	139
ICTERUS SPURIUS,	*Orchard Oriole* (male & female).	140
ICTERUS PHŒNICEUS,	*Red-winged Oriole* (male & female).	141
MOLOTHRUS PECORIS,	*Cow Bunting.*	143
*DOLICHONYX ORYZIVORUS,	*Boblink* (male & female).	144

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COCCOBORUS CERULEUS,	*Blue Grosbeak* (male).	145
COCCOBORUS LUDOVICIANUS,	*Rose-breasted Grosbeak* (male & f.).	146
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FRINGILLA GRAMINEA,	*Bay-winged Sparrow.*	151
FRINGILLA PENNSYLVANICA,	*White-throated Sparrow.*	152
*FRINGILLA LEUCOPHRYS,	*White-crowned Sparrow* (male).	153
EMBERIZA PASSERINA,	*Yellow-winged Bunting.*	156
*EMBERIZA HENSLOWI,	*Varied Bunting* (male).	157
EMBERIZA PUSILLA,	*Field Bunting.*	158
EMBERIZA SOCIALIS,	*Chipbird.*	159
EMBERIZA CANADENSIS,	*Tree Bunting* (male & female).	160
EMBERIZA SAVANNA	*Savannah Bunting.*	161
*AMMODRAMUS MARITIMUS,	*Sea-side Finch* (male).	163
AMMODRAMUS CAUDACUTUS,	*Quail-head.*	164
AMMODRAMUS PALUSTRIS,	*Swamp Finch.*	165
CARDUELIS TRISTIS,	*Yellowbird* (male & female).	166
*CARDUELIS PINUS,	*Pine Finch* (female).	167
*LINARIA MINOR,	*Lesser Redpoll* (male).	168
ERYTHROSPIZA PURPUREA,	*Crested Purple Finch* (male & fem.).	160
PITYLUS CARDINALIS,	*Cardinal Grosbeak* (male & female).	171
PIPILO ERYTHROPHTHALMUS,	*Chewink*, or *Ground Robin.*	172
SPIZA CYANEA,	*Indigobird.*	173
PYRANGA RUBRA,	*Black-winged Redbird.*	176
*PLECTROPHANES LAPPONICUS,	*Lapland Snowbird*†.	177

† Presented by J. W. TAYLOR, of Albany.

*PLECTROPHANES NIVALIS,	*White Snowbird* (male).	p. 178
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CORYTHUS ENUCLEATOR,	*Pine Bulfinch* (male & female).	181
LOXIA AMERICANA,	*American Crossbill* (male & female).	182
*LOXIA LEUCOPTERA,	*White-winged Crossbill* (male).	183

FAMILY PICIDÆ.

PICUS PILEATUS,	*Crested Woodpecker.*	184
PICUS ERYTHROCEPHALUS,	*Red-headed Woodpecker.*	185
PICUS VILLOSUS,	*Hairy Woodpecker.*	186
PICUS PUBESCENS,	*Downy Woodpecker.*	187
PICUS VARIUS,	*Yellow-bellied Woodpecker.*	188
PICUS CAROLINUS,	*Red-bellied Woodpecker.*	189
PICUS ARCTICUS,	*Arctic Woodpecker.*	190
PICUS AURATUS,	*Clape*, or *Golden-winged Woodpecker.*	192

FAMILY CUCULIDÆ.

COCCYZUS AMERICANUS,	*Yellow-billed Cuckoo.*	194
*COCCYZUS ERYTHROPHTHALMUS,	*Black-billed Cuckoo* (male & fem.).	195

FAMILY COLUMBIDÆ.

ECTOPISTES MIGRATORIA,	*Wild Pigeon.*	196
ECTOPISTES CAROLINENSIS,	*Carolina Turtle Dove.*	197

ORDER GALLINÆ.

FAMILY TETRAONIDÆ.

ORTYX VIRGINIANA,	*American Quail* (male & female).	202
*TETRAO UMBELLUS,	*Common Partridge*, or *Ruffed Grouse* (young).	204
*TETRAO CUPIDO,	*Grouse*, or *Pinnated Grouse* (female).	205
*TETRAO CANADENSIS,	*Spruce Grouse* (male & female).	206

ORDER GRALLÆ.

FAMILY CHARADRIDÆ.

		Zoology—Part II.
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Charadrius melodus,	*Piping Plover.*	210
Charadrius wilsonius,	*Wilson's Plover.*	211
Charadrius vociferus,	*Kildeer Plover.*	212
Charadrius virginiacus,	*Golden Plover.*	213
Squatarola helvetica,	*Whistling Plover.*	214
Strepsilas interpres,	*Turnstone.*	216
Hæmatopus palliatus,	*American Oystercatcher.*	217

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*Ardea cerulea,	*Blue Heron* (male).	222
Ardea virescens,	*Green Heron.*	224
Ardea exilis,	*Small Bittern.*	225
*Ardea minor,	*American Bittern*†.	226
Ardea discors,	*Black-crowned Night Heron.*	227
Ardea violacea,	*Yellow-crowned Night Heron.*	228

FAMILY SCOLOPACIDÆ.

Numenius longirostris,	*Long-billed Curlew.*	232
Numenius hudsonicus,	*Jack Curlew.*	233
Numenius borealis,	*Small Esquimaux Curlew.*	234
Hemipalma himantopus,	*Long-legged Sandpiper.*	235
Heteropoda semipalmata,	*Semipalmated Sandpiper.*	236
Tringa maritima,	*Purple Sandpiper.*	237
Tringa rufescens,	*Buff-breasted Sandpiper.*	238
Tringa subarquata,	*Curlew Sandpiper.*	239
Tringa cinclus,	*Black-breasted Sandpiper.*	240
Tringa schinzi,	*Schinz's Sandpiper.*	241
*Tringa pectoralis,	*Pectoral Sandpiper* (male & female)‡.	242

† Presented by T. Romeyn Beck.

‡ Presented by T. C. Henry, of Troy.

Tringa canutus,	*Red-breasted Sandpiper.*	p. 243
Calidris arenaria,	*Sanderling.*	245
Totanus macularius,	*Spotted Sand Lark.*	246
Totanus bartramius,	*Grey Plover.*	247
Totanus flavipes,	*Yellowlegs.*	248
Totanus chloropygius,	*Solitary Tatler.*	249
Totanus melanoleucus,	*Varied Tatler.*	250
Totanus semipalmatus,	*Willet.*	251
Limosa fedoa,	*Marlin.*	252
*Scolopax noveboracensis,	*Dowitchee* (male).	255
Scolopax wilsoni,	*Common American Snipe.*	256
Rusticola minor,	*American Woodcock.*	257

FAMILY RALLIDÆ.

*Rallus crepitans,	*Saltwater Meadow Hen* (male).	259
*Rallus elegans,	*Freshwater Meadow Hen* (male).	260
Rallus virginianus,	*Mud Hen.*	261
Ortygometra carolina,	*Sora Rail.*	262
Ortygometra noveboracensis,	*New-York Rail.*	263
Gallinula galeata,	*Florida Gallinule.*	264

FAMILY RECURVIROSTRIDÆ.

Himantopus nigricollis,	*The Lawyer* (male).	265
Recurvirostra americana,	*American Avoset.*	266

FAMILY PHALAROPODIDÆ.

Lobipes hyperboreus,	*Hyperborean Lobefoot.*	269

ORDER LOBIPEDES.

FAMILY PODICIPIDÆ.

Fulica americana,	*American Coot.*	272
*Podiceps cristatus,	*Crested Grebe* (male).	275
Podiceps rubricollis,	*Red-necked Grebe.*	276
Hydroka carolinensis,	*The Dipper.*	277

ORDER NATATORES.

FAMILY ALCIDÆ.

		Zoology—Part II.
Uria troile,	*Foolish Guillemot.*	279
Mormon arcticus,	*Arctic Puffin.*	282
Alca torda,	*Razorbill.*	283

FAMILY COLYMBIDÆ.

*Colymbus glacialis,	*Great Loon*, or *Diver* (male).	285
Colymbus septentrionalis,	*Red-throated Loon* (young).	286

FAMILY PROCELLARIDÆ.

Puffinus cinereus,	*Large Shearwater.*	287
Puffinus obscurus,	*Little Shearwater.*	288

FAMILY PELECANIDÆ.

Phalacracorax dolophus,	*Double-crested Cormorant.*	293
Sula americana,	*American Gannet* (female).	295

FAMILY LARIDÆ.

Rhynchops nigra,	*Black Skimmer.*	297
Sterna hirundo,	*Common Tern.*	298
Sterna nigra,	*Black Tern.*	300
Sterna anglica,	*Marsh Tern.*	301
Sterna argentea,	*Silvery Tern.*	305
Larus argentatus,	*Winter Gull.*	306
Larus marinus,	*Great Black-backed Gull* (male).	308
Larus zonorynchus,	*Common American Gull.*	308
Larus atricilla,	*Laughing Gull.*	310
Larus bonapartii,	*Bonaparte's Gull.*	311
Lestris richardsonii,	*Richardson's Hawk Gull.*	315

FAMILY ANATIDÆ.

		Zoology—Part II.
Mergus serrator,	*Red-breasted Sheldrake* (m. & f.).	p. 319
Mergus cucullatus,	*Hooded Sheldrake* (female).	320
*Fuligula valisneria,	*Canvassback* (male).	321
*Fuligula erythrocephala,	*Redhead.*	322
Fuligula marila,	*Broadbill.*	323
Fuligula rufitorques,	*Bastard Broadbill.*	325
Fuligula labradora,	*Pied Duck.*	326
Fuligula rubida,	*Ruddy Duck.*	327
Fuligula glacialis,	*Oldwife*, or *Squaw Duck.*	328
*Fuligula albeola,	*Buffle-headed Duck* (female).	329
*Fuligula clangula,	*Whistler* (female).	330
Fuligula mollissima,	*Eider Duck.*	332
Fuligula spectabilis,	*King Duck* (male).	334
Fuligula perspicillata,	*Surf Duck*, or *Coot.*	335
Fuligula americana,	*Broad-billed Coot.*	336
Fuligula fusca,	*White-winged Coot.*	337
Anas sponsa,	*Wood Duck.*	338
Anas discors,	*Blue-winged Teal.*	339
Anas carolinensis,	*Green-winged Teal.*	340
Anas acuta,	*Pin-tailed Duck.*	341
*Anas clypeata,	*Shoveller*, or *Spoonbill* (male & fem.).	342
Anas americana,	*American Widgeon.*	345
*Anas boschas,	*Mallard* (male).	347
*Anser hyperboreus,	*Snow Goose* (young).	350

There is also a specimen in the Collection of Gallinula martinica (*Purple Gallinule*), obtained by Mr. J. G. Bell, of New-York, within this State, and furnished by him to the Collection. It is considered *extra-limital* by Dr. De Kay. See his Birds of New-York, page 264.

N. B. Those that are marked with an *asterisk* have been added, either by purchase or donation, during 1847; and also 1848, up to the date of this report.

CATALOGUE OF THE SPECIMENS

IN THE

Mineralogical Department

OF THE

GEOLOGICAL SURVEY.

By Lewis C. Beck, M. D.

The order of arrangement and the names of the Minerals, are the same as those adopted in the Final Report on the Mineralogy of New-York.

MINERALS.

Names of Minerals.	Associates.	No.	Localities.	Counties.
SULPHUR,	in gypsum,	1	Springport,	Cayuga.
GRAPHITE,		2	Rogers' Rock,	Essex.
—	in quartz,	2	Ticonderoga,	"
—	in calcareous spar,	1	"	"
—	in quartz,	2	Port Henry,	"
—		4	Fishkill,	Dutchess.
—		1	Brown's quarry,	Putnam.
—		2	Edenville,	Orange.
— (artificial)		1	Rossie furnace,	St. Lawrence.
ANTHRACITE,		2	Little Falls,	Herkimer,
—		2	Sprakers',	Montgomery.
—	in calcareous spar,	1	Middleburgh,	Schoharie.
PEAT,		1	Lansingburgh,	Rensselaer.
HEAVY SPAR,		5	Schoharie C. H.	Schoharie.
—		2	Little Falls,	Herkimer.
—	in septaria,	4	Middleburgh,	Schoharie.
—		2	Syracuse,	Onondaga.
—		2	Pillar Point,	Jefferson.
—		2	Rossie,	St. Lawrence.
CELESTINE,		3	Stark,	Herkimer.
—		2	Syracuse,	Onondaga.
—		2	Lockport,	Niagara.
STRONTIANITE,		10	Schoharie C. H.	Schoharie.
—		1	near C. H.	"
—		1	Antwerp,	Jefferson.
CALCAREOUS SPAR,		2	Gouverneur,	St. Lawrence.
—		1	Diana,	Lewis.
—		4	Antwerp,	Jefferson.
—		9	Ox Bow,	"
—		2	Little Falls,	Herkimer.
—	with quartz,	1	Middleville,	"
—		3	Camillus,	Onondaga.
— (white)		2	Catskill,	Greene.
— (red)	with mica,	1	Cornwall,	Orange.
— "	"	1	Monroe,	"
— "		3	Cornwall,	"
—		5	Haverstraw,	Rockland.
—		2	Warwick,	Orange.
—		2	Amity,	"
—		1	Newburgh,	"
— (blue)		1	Natural Bridge,	Lewis.
—		4	Martinsburgh,	"
—		1	Middleville,	Herkimer.
—		10	Rossie,	St. Lawrence.
—		11	Near Catskill,	Greene.
—		2	Middleburgh,	Schoharie.
—		3	Cobleskill,	"
—		3	Diamond Point,	Warren.
—		1	Fort Ann,	Washington.
—	in oxide of iron,	2	Parish mine,	St. Lawrence.
—	with red spar,	2	Amity,	Orange.
—	with coccolite,	2	Monroe,	"
— (red)		2	"	"
— (white)		1	Edenville,	"

Names of Minerals.	Associates.	No.	Localities.	Counties.
Calcareous Spar,		9	Port Henry,	Essex.
—		4	Ball's cave,	Schoharie.
— (blue)		2	Diana,	Lewis.
— (green)		1	Schroon,	Essex.
—		1	Near C. H.	Schoharie.
—		1	Glenville,	Schenectady.
—		1	Roger's Rock,	Essex.
—		1	Diana,	Lewis.
— (brown spar)		1	Flat creek,	Montgomery.
—		1	Yonkers,	Westchester.
—		1	O'Niel mine,	Orange.
—		3	Parish mine,	St. Lawrence.
—		1	Muscolunge l'k,	Jefferson.
—		1	Gouverneur,	St. Lawrence.
—		1	Nethaway's c've	Schoharie.
— (stalactite)		1	Ball's cave,	“
—		1	Young's cave,	“
— (stalagmite)		1	Ball's cave,	“
—	with anthracite,	1	Middleville,	Herkimer.
—		1	Caldwell,	Warren.
—		1	Little Falls,	Herkimer.
—		2	Lockport,	Niagara.
Calcareous Sinter,		1	Newburgh,	Orange.
Oolitic Limestone,		2	Warwick,	“
—		2	Greenfield,	Saratoga.
Fibrous Limestone,		6	Camillus,	Onondaga.
—		1	Natural Bridge,	Jefferson.
—		1	Ball's cave,	Schoharie.
—	with heavy spar,	1	Carlisle,	“
—		2	Rossie,	St. Lawrence.
Agaric Mineral,		1	Cobleskill,	Schoharie.
Calcareous Tufa,		4	Jamesville,	Onondaga.
—		2	Lenox,	Madison.
—		1	Rochester,	Monroe.
— (chara)		1	Syracuse,	Onondaga.
—		1	Chittenango,	Madison.
Marl,		1	De Witt,	Onondaga.
—		3	Syracuse,	“
—		1	Salina,	“
Arragonite ?		1	Hopkins' farm, Monroe,	Orange.
—		1	Patterson,	Putnam.
—		2	O'Neil mine,	Orange.
—		1	Edenville,	“
Gypsum,		2	Stark,	Herkimer.
— (selenite)		1	Lockport,	Niagara.
—		2	“	“
—		1	Lenox,	Madison.
—		2	———	Onondaga.
—		4	Syracuse,	“
—		6	De Witt,	“
—		4	Manlius,	“
—		7	Camillus,	“
— (selenite)		1	O'Neil mine,	Orange.
Apatite,		1	Rossie,	St. Lawrence.
—		1	Hammond,	“
—		3	Hall mine,	Essex.
—		4	Edenville,	Orange.
—	in quartz,	1	West Farms,	Westchester.
—		2	Diana,	Lewis.
— (fibrous)	(Eupyrchroite, of Emmons)	3	Crown Point,	Essex.
Fluor Spar,		2	Lowville,	Lewis.
—		2	Amity,	Orange.
—		4	Niagara,	Niagara.
—		3	Schoharie C. H.	Schoharie.
—		2	Alexandria,	Jefferson.
—		2	Manlius,	Onondaga.
Pearl Spar,		1	Lockport,	Niagara.
—		2	Little Falls,	Herkimer.

Names of Minerals.	Associates	No	Localities.	Counties.
PEARL SPAR,		[illegible]	Niagara Falls,	Niagara.
BROWN SPAR,	in quartz,	2	Diamond island,	Warren.
—		3	Parish mine,	St. Lawrence.
DOLOMITE,		2	Kingsbridge,	New-York.
—		1	Rye,	Westchester.
—		1	Amenia,	Dutchess.
—		2	Dover,	"
—		1	Kane's quarry,	Westchester.
—		3	Verplanck's do	"
—		1	Haverstraw,	Rockland.
—		1	Port Henry,	Essex.
—		1	Patterson,	Putnam.
— (hard)		3	Quarantine,	Richmond.
GURHOFITE,		4	"	"
—		5	Phillipstown,	Putnam.
HYDRAULIC LIMESTONE		1	Schoharie C. H.	Schoharie.
—		1	Van Eps' quar'y	Montgomery.
—		1	Lockport,	Niagara.
MARLY CLAY,		5	Camillus,	Onondaga.
QUARTZ, (limpid)		1	Middleville,	Herkimer.
— "		1	Little Falls,	"
— "	with anthracite,	1	Middleville,	"
— "		3	Port Richmond,	Richmond.
— "		3	Diamond Point,	Warren.
— "		2	Craigville,	Orange.
— "		3	Ellenville,	Ulster.
— "		2	Ox Bow,	Jefferson.
— "		4	Red Bridge,	Ulster.
— "	in oxide of iron,	2	Sterling mine,	Jefferson.
— "		4	Diana,	Lewis.
— "		2	Wurtzboro' m'e	Sullivan.
— "		1	Catskill,	Greene.
— "		1	Ticonderoga,	Essex.
— "		3	Rossie,	St. Lawrence.
— "		2	Root,	Montgomery.
— "		1	Shawangunk mountains,	Sullivan.
— (massive)		1	New-Rochelle,	Westchester.
— "	with iron pyrites,	1	Yonkers,	"
— "		2	"	"
— (hornstone)		1	New-Rochelle,	"
— "		2	Sprakers,	Montgomery.
— (black)		2	Little Falls,	Herkimer.
—	with agate,	2	Saratoga Spri'gs	Saratoga.
— (ferruginous)		2	Quarantine,	Richmond.
—	with brown spar,	3	Warwick,	Orange.
— (rose)		3	Port Henry,	Essex.
— (jasper)		2	Warwick,	Orange.
— (calcedony)		3	"	"
— (hyalite)		2	Phillips mine,	Putnam.
— (ferruginous)		1	Warwick,	Orange.
—	with jasper,	1	Hastings,	Westchester.
TABULAR SPAR,		3	Lewis,	Essex.
—		3	Lewis Corners,	"
—		1	Diana,	Lewis.
SERPENTINE,		6	Syracuse,	Onondaga.
—		7	New-Rochelle,	Westchester.
— (marmolite)		1	"	"
—		3	Rye,	"
— (marmolite)		1	"	"
— (dark-colored)		1	New-Rochelle,	"
— "		1	Syracuse,	Onondaga.
—	in calcareous spar,	1	"	"
—	in magnetic iron ore,	1	Monroe,	Orange.
—		3	Rossie,	St. Lawrence.
— (black)		2	Warwick,	Orange.
—		2	Port Henry,	Essex.
— (verd antique)		5	"	"
—		4	Phillipstown,	Putnam.
— (soapstone)		3	Warwick,	Orange.
— "		1	Fort Ann,	Washington.

Names of Minerals.	Associates.	No.	Localities.	Counties.
SERPENTINE, (soapstone)		1	Wilks mine, Monroe,	Orange.
— "		1	Amity,	"
— "		1	Diana,	Lewis.
— (black)		2	Forshee mine, Monroe,	Orange.
—	with talc,	2	New-York,	New-York.
— (verd antique)		6	Amity,	Orange.
— (crystallized)	with pyroxene,	1	Greenwood,	"
— (green)		4	Fort Ann,	Washington.
— (grey)		2	"	"
—		2	Diana,	Lewis.
— (marmolite)		2	Phillipstown,	Putnam.
—		1	Quarantine,	Richmond.
—	with asbestus,	1	"	"
—		1	Gouverneur,	St. Lawrence.
—		1	Warwick,	Orange.
—		2	Amity,	"
—		4	Ox Bow,	Jefferson.
—		2	Natural dam,	St. Lawrence.
—	in calcareous spar,	1	Ox Bow,	Jefferson.
— (verd antique)		2	Gouverneur,	St. Lawrence.
— (yellow)		1	Phillipstown,	Putnam.
—		1	Streeter's, Ros'e	St. Lawrence.
— (soapstone)		2	Gouverneurbow	"
— (dark)		3	Brown's quarry,	Putnam.
— (black)	with mica,	1	Southeast,	"
MAGNESITE, (kerolite)		4	Stony Point,	Rockland.
CHONDRODITE,		1	Southeast,	Putnam.
— ?		3	Port Henry,	Essex.
—	with spinelle,	4	Rossie,	St. Lawrence.
—		10	Amity,	Orange.
—	with spinelle,	2	"	"
—		4	Edenville,	"
—	with spinelle,	1	"	"
— (crystallized)		2	"	"
—		2	Natural Bridge,	"
—	with spinelle,	1	Monroe,	"
— (crystallized)		1	"	"
—		2	"	"
TALC, (common)		1	Quarantine,	Richmond.
— (red and slaty,)		1	"	"
—	with fluor spar,	4	Amity,	Orange.
—		4	Fishkill,	Dutchess.
— (white)		1	Four miles from Quarantine,	Richmond.
—	with mica,	1	Amity,	Orange.
PYROXENE,		6	Edenville,	"
—		1	O'Niel mine, Monroe,	"
—		2	Rogers' Rock,	Essex.
—		4	Ticonderoga,	"
—		4	Greenwood, Monroe,	Orange.
—		3	Warwick,	"
—		2	Gouveneur,	St. Lawrence.
—		2	Rossie,	"
— (white)		1	Yonkers,	Westchester.
— "		3	Patterson,	Putnam.
— "		2	Kingsbridge,	New-York.
— (coccolite)		1	Bull's pond, Monroe,	Orange.
— "		1	O'Niel mine, Monroe,	"
— "	in red calcareous spar,	1	Two ponds, "	"
— "		1	Monroe,	"
— "	in quartz, &c.,	1	Rogers' Rock,	Essex.
— (coccolite, white)		2	Phillipstown,	Putnam.
— (coccolite)		1	Rogers' Rock,	Essex.
— "		2	Lewis Corners,	"
— "		1	Monroe,	Orange.

Names of Minerals.	Associates.	No.	Localities.	Counties.
PYROXENE, (coccolite)		2	Diana,	Lewis.
— "		1	Carmel,	Putnam.
— "		1	Fort Henry,	Essex.
— (sahlite)		1	Wilks mine, Monroe,	Orange.
— "		1	Crossway mine, Monroe,	"
— "		2	" "	"
— (sahlite, white)		1	Monroe iron mine,	"
— (bluish)		2	Haverstraw,	Rockland.
— (black)		1	Crag Harbor,	Essex.
— (diopside)		1	Phillipstown,	Putnam.
— (grey)		2	Richville,	St. Lawrence.
— (steatitic)	(RENSSELAERITE, of Emmons,)	2	Ox Bow,	Jefferson.
HORNBLENDE,	with epidote,	2	Carmel,	Putnam.
— (bowlder)		1	Nyack,	Rockland.
—	in quartz,	1	Lewis,	Essex.
—	in trap,	3	Monroe,	Orange.
—		14	Amity,	"
—		1	Peckville, Fishkill,	Dutchess.
—		2	Yonkers,	Westchester.
—		3	Edenville,	Orange.
— (black)		3	New-Rochelle,	Westchester.
—		2	Warwick,	Orange.
— (black)		2	Ticonderoga,	Essex.
—		5	Edenville,	Orange.
—		13	Southeast,	Putnam.
—		2	Gouverneur,	St. Lawrence.
—		1	Stoney Point,	Rockland.
—		1	Lewis,	Essex.
—		1	Florida,	Orange.
—		2	Barnum mine, Moriah,	Essex.
—	in trap,	2	Monroe,	Orange.
—		15	Amity,	"
—		2	Piermont,	Rockland.
—		2	Warwick,	Orange.
—		5	Edenville,	"
—		3	Spruce Swamp mine, Monroe,	"
—		1	Yonkers,	Westchester.
—		1	Southeast,	Putnam.
—	in iron ore,	2	Sandford mine, Moriah,	Essex.
— (black)		1	Crag Harbor,	"
— (brown)		4	Amity,	Orange.
—	in trap,	1	Haverstraw,	Rockland.
—		4	Warwick,	Orange.
— (granular)		2	Crag Harbor,	Essex.
—	in calcareous spar,	1	Sterling mine, Monroe,	Orange.
— (grey)		4	Monroe,	"
— (tremolite)		4	Patterson,	Putnam.
—		2	Gouverneur,	St. Lawrence.
—		3	Richville,	"
—		4	Kane's quarry,	Westchester.
—		3	Dover,	Dutchess.
—		2	Edenville,	Orange.
—		2	Hastings,	Westchester.
—		4	Kingsbridge,	New-York.
—		4	Amity	Orange.
—		1	Brown's quarry,	Putnam.
—		2	Phillipstown,	"
—		2	Port Henry,	Essex
—		3	New-Rochelle,	Westchester.
— (tremolite)		2	Rossie,	St. Lawrence.
— (actinolite)		1	Green mine, Cornwall,	Orange.

Names of Minerals.	Associates.	No.	Localities.	Counties
HORNBLENDE, (actinlite)		1	Fishkill,	Dutchess.
— "		1	Rye,	Westchester.
— "		1	Grassy Point,	Rockland.
— "		2	Kent,	Putnam.
— "		1	Peckville, Fishkill,	Dutchess.
— (pargasite)		2	Whitehall,	Washington.
— "		1	Rossie,	St. Lawrence.
— (edenite)		3	Warwick,	Orange.
— (asbestus)		4	Quarantine,	Richmond.
— "		1	Stony point,	Rockland.
— "		1	Sterling mine, Monroe,	Orange.
— "		1	O'Niel mine, Monroe,	"
— "		1	Patterson,	Putnam.
— "		1	Rogers' farm, Patterson,	"
— "		3	Newburgh,	Orange.
— "		3	Wilks mine, Monroe,	"
— "		3	Phillipstown,	Putnam.
— "	with serpentine,	1	"	"
— "		1	Ox Bow,	Jefferson.
— "		1	Greenwood furnace, Monroe,	Orange.
— (pseudomorphs)		2	Edenville,	"
— "		3	Amity,	"
ARFWEDSONITE ?	in calcareous spar,	1	Carmel,	Putnam.
HYPERSTHENE,		1	Putnam,	Washington.
ANTHOPHYLLITE,		2	Rye,	Westchester.
—		3	New-Rochelle,	"
HYDROUS ANTHOPHYLLITE,		2	N. York island,	New-York.
—		2	New-Rochelle,	Westchester.
—		1	Fishkill,	Dutchess.
SPINELLE,		9	Amity,	Orange.
— (red and grey)		1	"	"
—	in reddish hornblende	3	"	"
—	with chondrodite,	2	"	"
—	in carbonate of lime,	1	"	"
—	in clintonite,	1	"	"
— (green)		2	"	"
—		10	Edenville,	"
—		2	Mount Eve,	"
—		3	Warwick,	"
—		4	Ox Bow,	Jefferson.
GIBSITE,	in hematite,	1	Unionvale,	Duchess.
IDOCRASE,		4	Amity,	Orange.
—		2	Antwerp,	Jefferson.
GARNET,		2	Amity,	Orange.
—		9	Rogers' Rock,	Essex.
— (red)		3	"	"
—		1	Greenfield,	Saratoga.
—		2	Lewis Corners,	Essex.
—		1	New-Rochelle,	Westchester.
—	with pyroxene,	1	Amity,	Orange.
— (dark)		3	Lewis,	Essex.
—		1	Hague,	Warren.
—		2	Sprakers,	Montgomery.
—	in gneiss,	2	"	"
—		1	West Farms,	Westchester.
—		1	New-Rochelle,	"
—		1	O'Niel mine,	
		3	Monroe,	Orange.
—		1	Foss ore bed,	
		2	Dover,	Dutchess.
—		1	Yonkers,	Westchester.
— (colophonite)		2	Lewis,	Essex.
— "		1	Carmel,	Putnam.
— "		2	Rogers' Rock,	Essex.

Names of Minerals.	Associates.	No.	Localities.	Counties.
GARNET, (colophonite)		1	Sterling mount.	Orange.
— (cinnamon stone)		1	Amity,	"
SCAPOLITE,		1	"	"
—		5	Monroe,	"
—		1	Fall Hill, Monroe,	"
—		1	Two Ponds,	"
—		1	Edenville,	"
—	with pyroxene,	1	Ticonderoga,	Essex.
— ?	in calcareous spar,	3	Ox Bow,	Jefferson.
—		1	Lewis,	Essex.
—		1	Cheever mine,	"
—		1	Ticonderoga,	"
—		1	Diana,	Lewis.
— (nuttallite)		1	Natural Bridge,	"
— (pseudomorphs)		1	Ox Bow,	Jefferson.
STAUROLITE,		1	Dover,	Dutchess.
FELDSPAR,		2	Warwick,	Orange.
—		3	Monroe,	"
—		1	Sterling mine, Monroe,	"
—		1	Mountain mine, Monroe,	"
—		2	Spruce Swamp mine, Monroe,	"
—			Rich Iron mine, Monroe,	"
—		2	Forest of Dean, Monroe,	"
—		2	Edenville,	"
—		1	Bog Meadow Pond, Cornwall,	"
— (decomposed)		2	Southfield furn.	"
—		1	Greenfield,	Saratoga.
—		3	Cheever mine, Moriah,	Essex.
—		2	N. York island,	New-York.
—		1	Rogers' Rock,	Essex.
—		1	Mount Hope, Ticonderoga,	"
—		1	Ticonderoga,	"
—		1	West Farms,	Westchester.
—		3	Yonkers,	"
—		1	DeLong's Mill, Hammond,	St. Lawrence.
—		2	Rossie,	"
—		1	Harlem,	New-York.
—		2	French mount.	Warren.
—		2	Putnam,	Washington.
—		2	Diana,	Lewis.
—		1	Palmer mine,	Clinton.
—		2	Little Falls,	Herkimer.
—		1	Phillipstown,	Putnam.
—		1	Grassy Point,	Rockland.
ALBITE,		1	Granville,	Washington.
LABRADORITE,		2	Lewis Corners,	Essex.
—		2	Hall mine, Moriah,	"
—		2	Moriah,	"
— (bowlder)		1	Hamptonburgh,	Orange.
STELLITE,		2	Piermont,	Rockland.
STILBITE, (grey)		2	Harlem,	New-York.
— (red)		4	Peekskill,	Westchester.
—	in quartz,	2	Harlem,	New-York.
—	in granite,	1	"	"
PREHNITE,		1	Westport,	Essex.
EPIDOTE,		4	Harlem,	New-York.
—		2	Carmel,	Putnam.
—		1	Bog Meadow Pond, Cornwall,	Orange.

Names of Minerals.	Associates.	No.	Localities	Counties
EPIDOTE,	with sphene,	3	Warwick,	Orange.
—	in quartz,	2	Ticonderoga,	Essex.
—		2	Westport,	"
—		1	Putnam,	Washington.
TOURMALINE,		2	Port Henry,	Essex.
— (black)	with quartz,	1	Ticonderoga,	"
—		1	Gouverneur,	St. Lawrence.
—		2	Yonkers,	Westchester.
—		2	Harlem,	New-York.
—		1	Edenville,	Orange.
— (green)		2	"	"
—	in quartz,	2	Warwick,	"
—		2	Amity,	"
—		1	Greenfield,	Saratoga.
—		1	Richfield,	St. Lawrence
CLINTONITE,		2	Amity,	Orange.
BUCHOLZITE,		1	Cornwall,	"
—		3	Monroe,	"
MICA,		1	Ticonderoga,	Essex.
—		5	Antwerp,	Jefferson.
—		2	Ox Bow,	"
—		2	Rossie,	St. Lawrence
—		2	Edwards,	"
— (silvery)		2	"	"
—		2	Gouverneur,	"
—	with iron pyrites,	1	Diana,	Lewis.
—		5	Greenfield,	Saratoga.
—		1	Putnam,	Washington.
—		3	O'Neil mine, Monroe,	Orange.
—		8	Edenville,	"
— (green)		1	Greenwood, Monroe,	"
—	with talc,	1	Amity,	"
—		6	Monroe,	"
— (copper)		3	Edenville,	"
—	in red calc. spar,	1	Monroe,	"
—		2	Warwick,	"
—		2	Wilks mine, Monroe,	"
— (lithion ?)		2	Edenville,	"
—		2	Warwick,	"
— (yellow)		1	"	"
— (silvery)		1	Amity,	"
—	with talc,	2	Kane's quarry,	Westchester.
— (green)		4	Yonkers,	"
— (black)		1	"	"
—		1	West Farms,	"
—		2	New Rochelle	"
—		1	Rye,	"
—		1	Southeast,	Putnam.
CHRYSOBERYL,		2	Greenfield,	Saratoga.
ZIRCONITE, (black)		3	Warwick,	Orange.
—	in granite,	2	"	"
—	in feldspar,	1	"	"
—	in quartz,	2	"	"
—	in scapolite,	1	Edenville,	"
—		2	Cornwall,	"
—	in magnetic iron ore,	1	"	"
—		1	Canterbury,	"
—		1	DeLong's mill	
—		2	Hall mine, Moriah,	St. Lawrence. Essex.
MAGNETIC IRON ORE,		5	Sandford mine Moriah,	"
—		2	Ticonderoga,	"
—		3	Penfield mine, Crown Point,	"
—		2	Everest and Green Mine, Moriah,	"

Names of Minerals.	Associates.	No.	Localities.	Counties.
MAGNETIC IRON ORE,		2	Hall mine, Moriah,	Essex.
—		2	Hall new mine, Moriah,	“
—		2	Crag Harbour,	“
—		1	Barnum mine, Moriah,	“
—		1	Everest mine, Moriah,	“
—		2	Cheever mine, Moriah,	“
—		2	Arnold mine,	Clinton.
—		2	Palmer mine,	“
—		1	Rutgers mine,	“
—		1	Wicks mine, Antwerp,	Jefferson.
—		2	French mount.	Warren.
—		[illegible]	Jessup's landing	Saratoga.
—		2	Salisbury,	Herkimer.
—		9	Forshee mine, Monroe,	Orange.
—		4	Wilks mine, Monroe,	“
—		1	Greenwood furnace,	“
—		5	O'Neil mine, Monroe,	“
—		2	Johnson mine, Cornwall,	“
—		1	Bush mine, Canterbury,	“
—		1	Forest of Dean mine, Cornwall	“
—		1	Natural bridge, Monroe,	“
—		2	Tompkins mine Monroe,	“
—		1	Halleck mine, Monroe,	“
—		1	Long mine, Monroe,	“
—		1	Conklin mine, Monroe,	“
—		1	Rutter mine, Monroe,	“
—		1	Mountain mine, Monroe,	“
—		1	Stirling mine, Monroe,	“
—		1	New mine, Monroe,	“
—	in calcareous spar,	1	O'Niel mine, Monroe,	“
—		2	Green mine, Cornwall,	“
—	with zirconite,	1	Deer hill, Cornwall,	“
—		1	New Patterson mine, Monroe,	“
—		3	Rich mine, Monroe,	“
—		1	Crossway mine, Monroe,	“
—		2	Alice mine, Monroe,	“
—		4	Phillips mine,	Putnam.
—		3	Southeast,	“
—		2	Horsenclever mine, Haverstraw,	Rockland.
MAGNETIC IRON SAND,		2	Port Henry,	Essex.
—		1	Duck pond,	Suffolk ?

Names of Minerals.	Associates.	No.	Localities.	Counties.
MAGNETIC IRON SAND,		1	Lyonsdale,	Lewis.
SPECULAR IRON ORE,		4	Dodge mine, Hermon,	St. Lawrence.
—		2	Governeur Bow,	"
—		2	Bolton mine, Hermon,	"
—		1	Noble mine, Edwards,	"
—		1	Kearney mine,	"
—		1	Parish mine,	"
—		1	Antwerp,	Jefferson.
—		2	Near Natural Bridge,	"
—		1	Port Henry,	Essex.
— (red hematite)		1	Ticonderoga,	"
— (jaspery iron)		1	Hall mine, Moriah,	"
— (lenticular)		2	Rochester,	Monroe.
— (red)		1	Ox Bow,	Jefferson.
— (jaspery iron)		1	Parish mine,	St. Lawrence.
LIMONITE,		2	Ox Bow,	Jefferson.
—		1	Port Henry,	Essex.
—		2	Whitehall,	Washington.
—		2	Fishkill,	Dutchess.
—		5	Unionvale,	"
—		1	Amenia,	"
—		2	Pine Hill, Monroe,	Orange.
—		3	Near Canterb'y,	"
—		1	Warwick,	"
—	with mag. iron ore,	3	Spruce swamp mine, Monroe,	"
—		2	Near Wilks mine, Monroe,	"
—		2	Edenville,	"
— (umber)		3	Forshee mine, Monroe,	"
— (ochre)		2	Greig,	Lewis.
—		1	Wurtzboro,	Sullivan.
—		3	3 miles from Quarantine,	Richmond.
—		2	Peekskill,	Westchester.
IRON PYRITES,		1	Rossie,	St. Lawrence.
—	in calcareous spar,	2	Port Henry,	Essex.
—		2	Diana,	Lewis.
—		3	Martinsburg,	"
—		1	Flat Creek,	Montgomery.
—		1	Yonkers,	Westchester.
—	in dolomite,	2	Schoharie, C. H.	Schoharie.
—		1	Kingsbridge,	New-York.
—		1	Wurtzboro,	Sullivan.
—		2	Newburgh,	Orange.
—		1	Warwick,	"
MAGNETIC IRON PYRITES,		1	Monroe,	"
—		2	Port Henry,	Essex.
ARSENICAL IRON PYRITES,		3	Brown's quarry,	Putnam.
—		6	Edenville,	Orange.
—		1	Amity.	"
IRON SINTER,		3	Edenville,	"
SPATHOSE IRON,		4	Parish mine,	St. Lawrence.
—		1	Dodge mine, Hermon,	"
CHROME-IRON ORE,	in serpentine,	1	Quarantine,	Richmond.
—	"	1	Rye,	Westchester.
CACOXENITE,		2	Sterling mine, Antwerp,	Jefferson.
HUDSONITE,		1	Cornwall,	Orange.
OXIDE OF MANGANESE,		1	Unionvale,	Dutchess.

Names of Minerals.	Associates.	No.	Localities.	Counties.
OXIDE OF MANGANESE,		2	Warwick,	Orange.
—	with iron ore,	1	Sprakers,	Montgomery.
—		1	Crown Point,	Essex.
ZINC BLENDE,		1	Flat Creek, Root,	Montgomery.
—		2	Ellenville,	Ulster,
—		4	Wurtzboro,	Sullivan,
—		2	Lockport,	Niagara.
—		1	Niagara Falls,	"
GALENA,		2	Old Rossie mine	St. Lawrence.
—		2	Mineral Point,	"
—		8	Martinsburgh,	Lewis.
—		2	Flat Creek, Root,	Montgomery.
—	with zinc blende,	1	Flat Creek, Root,	"
—		5	Wurtzboro,	Sullivan.
COPPER PYRITES,		1	Rossie,	St. Lawrence.
—		1	Wurtzboro,	Sullivan.
—		1	Kane's quarry,	Westchester.
CARBONATE OF COPPER,		1	Phillipstown,	Putnam.
RUTILE,		2	Amity,	Orange.
ILMENITE,		4	Warwick,	"
—		2	Stirling mine, Monroe,	"
—		1	Cornwall,	"
SPHENE,		2	Diana,	Lewis.
—		2	Phillips mine,	Putnam.
—		2	Warwick,	Orange.
—	in feldspar, &c.,	2	Amity,	"
—		2	Bush mine, Cornwall,	"
WARWICKITE,		2	Warwick,	"
—		2	Edenville,	"
MOLYBDENITE,		1	23d Street.	New-York.

CATALOGUE OF SPECIMENS

IN THE

Geological Department

OF THE

GEOLOGICAL SURVEY.

By James Hall.

EXPLANATION.

In numbering and cataloguing this portion of the Geological Collection, I have made some slight alteration in the previous arrangement of the specimens in the cases, in order to bring those kinds more intimately related into proximity. I have not felt at liberty to change the names of any specimens among the crystalline rocks, which, perhaps, could be appropriately done, since the term *primary*, especially, as applied to any mineral aggregate, conveys an incorrect or doubtful meaning. The specimens under the Taconic system have also been numbered as they were originally arranged, with some slight alteration in the relative position of specimens only.

The following arrangement of the groups of specimens, in general accordance with their mineral character, has been adopted:

I. Granitic Rocks;

Including all mineral aggregates, where quartz, felspar and mica are the predominating minerals, or where one or more of them occur.

Examples: Granite, Gneiss, Mica slate, etc.

II. Syenitic Rocks;

Including aggregates where hornblende or augite is superadded to the preceding, or united with either of them. In this association are included Trap, Amygdaloid, etc.

Examples: Syenite, Labradorite or Hypersthene rock, Hornblende rock, etc.

III. Talcose or Magnesian Rocks;

Including all talcose or magnesian and chloritic aggregates.

Examples: Talcose slate, Chlorite slate, Serpentine, &c.

IV. CALCAREOUS ROCKS;

Including limestones or aggregates where carbonate of lime is the chief ingredient. Under this head are also included some minerals associated with the crystalline limestone of New-York.

N. B. The magnetic iron ores are arranged after the granitic or syenitic rocks, their natural association being usually with gneiss or syenite. The specular and other ores follow the limestones, associated with which they usually occur in New-York.

CRYSTALLINE AND METAMORPHIC ROCKS.

I. PRIMARY SYSTEM.

Table Case.

1 GRAPHIC GRANITE.	Staten Island.
2 GRANITE.	Westchester county.
3 GRAPHIC GRANITE.	
4 GRANITE.	Stony point, Rockland co.
5 GRANITE (gneissoid).	Dean's bridge, Westchester co.
6 GRANITE (fine-grained).	
7 GRANITE (gneissoid).	Half mile west of Clove mine, Monroe, Orange co.
8 GRANITE.	Buttermilk falls, Cornwall, Orange.
9 GRANITE (sienitic).	
10 GRANITE.	Nine miles east of Boonville, Lewis.
11 GRANITE (red).	Head of feeder near Boonville, Lewis.
12 GRANITE (felspathic and decomposing).	
13 KAOLIN.	
14 RED GRANITE.	Head of feeder, Boonville, Lewis.
15 GRANITE (sienitic).	Highlands.
16 GNEISS.	Gen. Van Cortland's farm, two miles west of Peekskill, Westchester.
17 GNEISS.	Philips's quarry, two and a half miles south of Coldspring, Putnam.
18 GNEISS.	Howard's quarry, two and a half miles north of Coldspring, Putnam.

19 Gneiss.	Beekman's quarry, one mile above Tarrytown, Westchester.
20 Gneiss (with calcareous matter).	Littlefalls.
21 & 22 Gneiss.	Littlefalls.
23 Gneiss.	Two miles south of Cranberry creek.
24 Gneiss.	Haven's quarry, two and a half miles south of Westpoint, Orange.
25 Gneiss.	Northeast end of Fourth lake.
26 & 27 Gneiss.	
28 Gneiss.	Three and a half miles north of Trenton village, near Remsen.
29 Gneiss.	Between Kingsborough and Clarke's.
30 Gneiss.	Congdon & Gifford's, Salisbury, Herkimer.
31 Epidotic gneiss.	Mrs. Garrison's farm, half a mile south of Scrub-oak plains in Yorktown, Westchester.
32 Mica slate.	Two & a half miles below Verplank's, half mile northwest H. J. Cruger's, Westchester.
33 Quartz (with mica).	Northeast end of Fourth lake.
34 Scapolite rock.	Head waters of Ausable, Essex.
35 Scapolite rock.	Northeast part of Lewis county.
36 Hypersthene or Labradorite (granitic).	
37 Labradorite, etc. (granitic).	
38 Hornblende.	One mile northeast of New-Rochelle, Westchester.
39 Coccolite, etc.	Northeast end of Fourth lake, Philipstown, Putnam.
40 Tremolite.	Slosson's quarry, one and a half mile west of North-Salem, Westchester.
41 Magnetic iron ore.	Arnold mine, Clintonville, Clinton.
42 Magnetic iron ore.	Salisbury, Herkimer.
43 Magnetic iron ore.	Salisbury, Herkimer.
44 Talcose rock.	Cleveland, Natural bridge, Jefferson.

45 Talco-serpentine rock. Half a mile northeast of Peekskill, Dutchess.

46 Serpentine (Brown's black marble). Three miles northwest of Putnam county court-house.

47 Serpentine (Fay's black marble). Three miles northwest Putnam court-house.

48 Talcose rock.

49 Crystalline limestone. North-Salem, Westchester.

50 Crystalline limestone (blue). Natural bridge, Diana, Jefferson.

51 Flesh-colored limestone. Dean mine, Monroe, Orange.

52 Crystalline limestone. Slasson's quarry, half a mile west of North-Salem, Westchester.

53 Granular limestone. One mile southeast of Leedsville, in Amenia, Dutchess.

54 Crystalline limestone (with scapolite, augite, etc.).

55 Crystalline limestone. Northeast end of Fourth lake.

56 Crystalline limestone (with mica). Four miles northeast of Old toll-house, Lewisburgh.

57 Granular limestone (striped). M'Coy's farm, one mile and a half northwest of Peekskill, Westchester.

58 Granular limestone (variegated). Gen. Van Cortland's farm, one mile and a half west-northwest of Peekskill, Westchester.

59 Crystalline limestone. Abram Miller's quarry, five and a half miles southwest Somerstown plains, Westchester.

60 Crystallized limestone (with crystallized mica). Old toll-house, four miles northeast of Lewisburgh.

61 Flesh-colored limestone.

62 Crystalline limestone (with brucite or chondrodite). Schroon, Essex.

63 Crystalline limestone (marble). One mile and a half west of Westfarms, Westchester.

64 Granular limestone (white marble). Foss's quarry, one mile southeast of Dover plains, Dutchess.

65 Gray granular limestone. Cruger's farm, Cortland, Westchester.

66 Sulphate of strontian (crystallized). —— ?

67 Kakoxene. William's run, Natural bridge, Jefferson.

Vertical Case.

68 Gneiss.	Pine pond, Carmel, Putnam.
69 Gneiss.	Blunt's quarry, half a mile north of Coldspring, Putnam.
70 Felspathic granite.	From a stratum west of Beekman's quarry.
71 Red granite.	Lewisburgh, Lewis.
72 Graphic granite.	Gouverneur, St. Lawrence.
73 Gneiss.	Lewisburgh furnace, Lewis.
74 Gneiss.	Herkimer.
75 Gneiss.	
76 Gneiss (with mica).	Fourth lake, Hamilton.
77 Porcelain clay (kaolin).	Johnsburgh, Warren.
78 Gneiss (junction of hypersthene and gneiss rock).	
79 Felspar (in hypersthene rock).	Westport, Essex.
80 Rose quartz.	Moriah, Essex.
81 Felspar (red).	Alexandria, Jefferson.
82 Gneiss.	Rossie lead mine, St. Lawrence.
83 Purple scapolite.	Antwerp, Jefferson.
84 & 85 Fused quartz.	Hammond, St. Lawrence.
86 Hypersthene rock (gneissoid).	Near Ross's bridge.
87, 88 & 88(bis) Hypersthene rock (passing into gneiss).	Essex.
89 & 90 Hypersthene rock (syenitic).	Moriah, Essex.
91, 92, 93 Labradorite.	Adirondack, Essex.
94 Labradorite (greenish).	Adirondack, Essex.
95 Sahlite (in hypersthene rock).	Westport, Essex.
96 Primitive greenstone.	One mile and a half below Peekskill, Westchester.
97 White augite.	Near Beverly landing.
98 Epidote.	Westport, Essex.
99 Syenite.	Moriah, Essex.
100 Hornblende.	Westport, Essex.
101 Trap.	
102 Obsidian.	Johnsburgh, Warren.

103	Trap (lava-like).	Parish ore bed, St. Lawrence.
104	Trap (with striated surface).	Ross's bridge, Essex.
105	Vein-stone, or trap.	Singsing.
106 & 107	Dendritic porphyry.	Essex, Essex.
108	Tremolite.	Gouverneur, St. Lawrence.
109	Epidote (a boulder).	
110	Magnetic iron ore (in limestone).	Three miles south of Cold-spring, Putnam.
111	Magnetic oxide of iron.	Sanford ore bed, Clinton.
112	Magnetic oxide of iron.	Alexandria, Jefferson.
113 & 114	Silvery talc.	Fowler, St. Lawrence.
115	White talc.	Fowler, St. Lawrence.
116 & 117	Talc.	Fowler, St. Lawrence.
118	Porphyritic talcose slate.	West of Westport, Essex.
119	Serpentine (calcareous).	Warrensburgh, Warren.
120 & 121	Serpentine.	Moriah, Essex.
122	Serpentine.	Bolton, Warren.
123	Serpentine.	Stirling ore bed.
124	Serpentine (with quartz).	Stirling ore bed, St. Lawrence.
125	Serpentine.	Phillipstown, Putnam.
126	Serpentine.	Moriah, Essex.
127	Fibrous serpentine.	Troy, Vermont.
128	Quartz (in chlorite).	Brant lake.
129	Rensselaerite.	Natural bridge, Jefferson.
130	Rensselaerite (with satin spar).	Fowler, St. Lawrence.
131	Rensselaerite (sawed slab).	Edwards, St. Lawrence.
132	Rensselaerite.	Edwards, St. Lawrence.
133	Primary limestone (with augite).	Lewisburgh, Lewis.
134	Primary limestone.	Fourth lake, Hamilton.
135	Primary limestone (quartz, etc.).	Hamilton.
136	Primary limestone (with quartz and pyroxene).	Moriah, Essex.
137	Primary limestone (with chondrodite).	Port Henry, Essex.
138	Primary limestone (with plumbago & iron pyrites).	St. Lawrence.
139	Primary limestone.	Near West-Point.

140 Primary limestone. Near Putnam county court-house.

141 Primary limestone (micaceous). Putnam.

142 Primary limestone (micaceous). Westchester.

143 Primary limestone (with graphite). St. Lawrence?

144 Primary limestone. Port Henry, Essex.

145 Primary limestone (with graphite). Port Henry, Essex.

146 Primary limestone (with augite and hornblende). St. Lawrence.

147 Primary limestone (with scapolite). Johnsburgh, Warren.

148 Ferruginous limestone. Johnsburgh, Warren.

149 Serpentine marble. Near Putnam county court-house.

150 Serpentine marble. Moriah, Essex.

151 Serpentine marble. Port Henry, Essex.

152 Primary limestone (serpentine).

153 Primary limestone (with crystals of mica). Antwerp, Jefferson.

154 & 155 Primary limestone.

156 Primary limestone (granitic). Gouverneur, St. Lawrence.

157 Granitic limestone. Gouverneur, St. Lawrence.

158, 159, 160 Specular oxide of iron. Edwards, St. Lawrence.

161 Specular oxide of iron. Fowler, St. Lawrence.

162 Quartz crystals (on specular iron ore). Edwards, St. Lawrence.

163 Quartz crystals (on limestone). Laidlaw lake, Jefferson.

164 Calcareous spar. Lead mine, Rossie, St. Lawrence.

165 Calcareous spar (with chalcedony). Edwards, St. Lawrence.

166 Crystalline limestone (with a nodule of magnesian limestone) Stirling's lead mine, Gouverneur.

167 Fluate of lime (fluor spar). Muscalunge lake, Jefferson.

168 Brown mica (prismatic crystals). Pope's mill, Jefferson.

169 Brown mica. Edwards, St. Lawrence.

170 Colophonite. Johnsburgh, Warren.

171 Brucite. Schroon, Essex.

172 Copper pyrites. Paradox lake, Essex.

173 Manganese (oxide). Crownpoint, Essex.

II. TACONIC SYSTEM.*

Table Case.

1	Mica slate (containing garnets).	SW corner of Dover, Dutchess.
2	Mica slate (alum rocks).	Three miles south of Ameniaville, Dutchess.
3	Micaceous slatr.	Taghkanic falls, quarter of a mile from the New-York line, Mass.
4	Granular quartz.	Hall's point, two and a half miles west of Peekskill, Westchester.
5	Compact quartz rock.	One mile E Poughkeepsie, Dutchess.
6	Granular quartz.	One mile southeast of Klyne's corners, Amenia, Dutchess.
7	Quartz rock.	Southwest side of Stissing mountain, Stanford, Dutchess.
8	Quartz (with galena).	Lead mine, Amenia, Dutchess.
9	Copper ore (in quartz).	NE corner of Washington, Dutchess.
10	Gneiss.	Loose below Harrisville; to be found in place at Garve's, five miles above.
11	Limestone.	Stormville, Dutchess.
12	Sparry limestone.	
13	Talcy limestone.	
14 & 15	Talcy limestone.	Stormville, Dutchess.
16	Talco-slaty limestone.	Stormville, Dutchess.
17	Granular limestone.	Near iron ore bed, Amenia, Dutchess.
18	Talcy slaty limestone.	Lebanon springs, Columbia.
19	Magnesian slate.	Richmond, Vermont.
20	Granular limestone (white marble).	Stevens's quarry, two miles southeast of Dover plains, Dutchess.
21	Granular limestone.	Eastern base Williamstown mountain, Egremont, Massachusetts.
22 & 23	Granular limestone.	Western base of Williamstown mountain range, Hillsdale, Columbia.

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* In this series the talcose and other slates follow the limestones, this being their ascertained order of superposition.

24	Clouded marble.	E. Merrit's farm, Northeast, Dutchess.
25	Talcy limestone.	NW corner of Unionville, Dutchess.
26	Granular limestone.	Bounding the iron ore bed on the west, Amenia, Dutchess.
27	Limestone.	Gen. Van Cortland's quarry, near Blue rock, Cortland, Westchester.
28	Limestone (colored by iron).	Ore bed, Lewisburgh, Lewis.
29	Impure crystalline limestone.	Reamer's ore bed, Lewisburgh.
30	Crystalline limestone (colored by iron).	Lewisburgh.
31	Crystalline limestone.	Ore bed near Lewisburgh.
32	Limestone.	Near Green pond, Lafarge's farm, Harrisville, near the Potsdam sandstone.
33	Slaty limestone.	Lead mine, Amenia, Dutchess.
34	Sparry limestone.	
35	Hematitic iron ore (stalactitic).	Dutchess.
36	Hematitic iron and limestone.	Dutchess.
37	Loose materials (consolidated by iron ore).	Iron mine, Stockbridge, Massachusetts.
38	Carbonate of iron.	Stockbridge iron mine, Mass.
39	Quartz rock, or Buhrstone.	Near Washington, Mass.?
40	Specular iron ore.	Lafarge's farm, near Green pond, Harrisville.
41	Specular iron ore.	Near Green pond, Lafarge's farm, Harrisville, near the Potsdam sandstone.
42	Peroxide of iron.	Stirling mine, Jefferson.
43	Peroxide of iron and kakoxene.	Stirling mine, Jefferson.
44	Peroxide of iron.	Ore bed near Lewisburgh.
45 & 46	Peroxide of iron & quartz.	Iron ore bed near Lewisburgh.
47 & 48	Carbonate of iron? etc.	Near ore bed, Lewisburgh.
49	Iron pyrites, etc.	Reamer's ore bed, Indian lake, Lewis.
50	Iron pyrites.	Reamer's ore bed, Indian lake.
51	Iron pyrites.	Cleveland's, Natural bridge, Jefferson.
52	Slate.	One mile south of Montrose, Dutchess.

53	Slate (hornblendic).	Two miles east of Hillsdale, Columbia.
54	Slate (green).	Quarter mile east of Canaan centre, Columbia.
55	Talcose slate.	SW side of Canaan gap, Columbia.
56	Slate.	Quarter mile south of Canaan centre.
57	Talcous slate.	Cen. Van Cortland's farm, south end of Gallows hill, half a mile north-northwest of Peekskill, Westchester.
58	Mica and talcy slate.	Bounding the iron ore bed on the east at Amenia, Dutchess.
59	Magnesian slate.	Top of Taconic mountain, between Williamstown (Mass.) and Petersburgh (N. Y.).
60	Slate.	Pleasant plain, Clinton, Dutchess.
61	Green slate.	One mile southwest of Washington hollow, Dutchess.
62	Taconic slate.	Petersburgh (foot of Taconic mount.).
63	Green talcy slate.	
64	Magnesian slate.	Summit Taconic mountain, between Williamstown and Petersburgh.
65	Talcose slate.	Summit of Williamstown mountain range, on the line of Massachusetts & New-York, Hillsdale, Columbia.
66	Limestone (at its junction with talcous slate).	Gen. Van Cortland's quarry, Cortland, Westchester.
67	Magnesian slate.	Summit Taconic mountain, between Williamstown and Petersburgh.
68	Slate (at the Hone-hill containing needleform schorl).	Williamstown, Massachusetts.
69	Chlorite slate.	Stephen Smith's, Canaan, Columbia.
70	Chlorite and carbonate of iron (in magnesian slate).	Summit of Taconic mountain.
71	Chloritic rock (the silver ore).	Cleveland's, Natural bridge, Jefferson.
72	Serpentine.	Cleveland's, Natural bridge.

Vertical Case.

73 Limestone (in slate). Hanford, Dutchess.
74 Sparry limestone. Warwick, Orange.
75 Sparry limestone. Unionvale, Dutchess.
76 Limestone (near the slate). Arthursburgh, Dutchess.
77 Sparry limestone (near the slate). Hoosick, Rensselaer.
78 Sparry limestone (slaty). Hoosick, Rensselaer.
79 Sparry limestone. Bloomingrove, Orange.
80 Slaty limestone. Ashford, Massachusetts.
81 Stockbridge marble (crystallized limestone). Dover, Dutchess.
82 White crystallized limestone. Singsing, Westchester.
83 Granular limestone (dolomitic). Singsing, Westchester.
84 Granular limestone (dolomitic, clouded). Singsing.
85 Crystalline limestone. Whiteplains, Westchester.
86 Crystalline limestone. Redford, Westchester.
87 Granular limestone (blue). Singsing, Westchester.
88 Grey limestone (compact). Beekmanville, Dutchess.
89 Clouded slaty limestone. Amity, Orange.
90 Slaty limestone. Verplanck, Westchester.
91 Crystalline limestone. Eastchester, Westchester.
92 Crystalline limestone. Westfarms, Westchester.
93 & 94 Crystalline limestone. Kingsbridge, New-York.
95 Crystalline limestone. Stanford, Westchester.
96 Granular limestone. Verplanck, Westchester.
97 Granular limestone (bluish). Dover plains, Dutchess.
98 Crystalline limestone. Eastchester, Westchester.
99 Granular limestone. Whiteplains, Westchester.
100 Limestone (silicious and gneissoid). Adams, Massachusetts.
101 Limestone with talc. New-Ashford, Mass.
102 Chert in limestone. Williamstown, Mass.
103 Granular limestone (yellow). Williamstown, Mass.
104 Milky quartz (in limestone). Williamstown, Mass.
105 Granular limestone (marble, sawn slab). New-Ashford, Mass.

106 Granular limestone (with talc).	New-Ashford, Mass.
107 Limestone with talc.	New-Ashford, Mass.
108 Ferruginous quartz.	Williamstown, Mass.
109 Granular and slaty limestone (with talc).	Williamstown.
110 Iron froth.	Cortland, Westchester.
111 – 114 Taconic slate.	Hoosic, Rensselaer.
115 Taconic slate.	Clinton, Dutchess.
116 Magnesian slate.	Taconic range.
117 Magnesian slate.	Richmond, Vermont.
118 Magnesian slate.	Williamstown, Massachusetts.
119 Magnesian slate (with quartz).	Williamstown, Mass.
120 Graphic slate.	Bennington, Vermont.
121 Magnesian slate.	Saddle mountain, Williamstown.
122 Magnesian slate.	Williamstown.

⁂ The following specimens, contained in the vertical case marked *Taconic System*, ought to be arranged under the *Primary System*.

1 Augite.	Sparta, Westchester.
2 Granite.	Fort Montgomery.
3 Granite.	Mountain mine.
4 Garnet in Gneiss.	O'Neil mine, Monroe, Orange.
5 Granite.	Tenth avenue, near 48th-st. N. York.
6 Granite.	Patterson mine, Monroe, Orange.
7 Granite.	Monroe, Orange.
8 Granite.	Royahook, Westchester.
9 Granite.	Long mine, Monroe, Orange.
10 Granite.	Fort Montgomery, Cornwall.
11 Granite.	Rocky hill, Orange.
12 Granite (containing magnetic oxide of iron).	Shenadone, Dutchess.
13 Granite (in limestone).	Orange.
14, 15, 16 Gneiss.	West-Point, Orange.
17 Gneiss.	Singsing.
18 Gneiss.	Dobbs's ferry, Westchester.

19 Gneiss.	Peekskill.
20 Gneiss.	Mountpleasant, Westchester.
21 Gneiss.	West-Point, Orange.
22 Gneiss.	Stormville, Westchester.
23 Gneiss.	Singsing, Westchester.
24 Gneiss.	Jamestown plain, Westchester.
25 Gneiss.	Shenadone, Dutchess.
26 Gneiss (micaceous).	Clove mine, Orange.
27 Mica slate.	Whiteplains, Westchester.
28 Mica slate.	Hurd's corners, Dutchess.
29 Hornblende.	Dutch hollow, Warwick, Orange.
30 Syenite.	Cortland, Westchester.
31 Trap.	Fort Washington.
32 Trap.	Greenwood furnace, Monroe, Orange.
33 Trap.	Near the Saw-works, Monroe, Orange.
34 Trap (in limestone).	Monroe, Orange.
35 Augite (in limestone).	Monroe, Orange.
36 Magnetic oxide of iron.	Forshee's mine, Monroe, Orange.
37 Magnetic oxide of iron.	O'Neil mine, Monroe, Orange.
38 Magnetic oxide of iron.	Clove mine, Orange.
39 Magnetic oxide of iron.	Mountain mine, Orange.
40 & 41 Magnetic oxide of iron.	Patterson mine, Monroe, Orange.
42 Magnetic oxide of iron.	Forest of Dean, Monroe, Orange.
43 Aragonite (on magnesian oxide of iron).	O'Neil mine, Orange.
44 Primary limestone (containing pyroxene).	Stirling mine, Orange.
45 Primary limestone (with mica).	Monroe, Orange.
46 Limestone (serpentine and boltonite).	Forest of Dean, Orange.
47 Primary limestone (with meionite).	Monroe, Orange.
48 Primary limestone (with pyroxene).	Monroe, Orange.
49 Primary limestone.	Edenville, Orange.
50 White limestone (with green spinelles).	Three miles southwest of the Saw-works, Monroe, Orange.
51 Serpentine & limestone.	58th-street, near 10th avenue, N. York.
52 Black serpentine.	

53	Serpentine.	Forshee's mine, Monroe, Orange.
54	Serpentine and amianthus.	O'Neil mine, Monroe, Orange.
55	Serpentine (surface striated).	
56	Specular oxide of iron.	Reamer's furnace, Lewisburgh.
57	Quartz crystals (and specular oxide of iron).	Edwards, St. Lawrence.
58	Peroxide of iron.	
59	Specular oxide of iron.	Edwards, St. Lawrence.
60	Gibbsite.	
61	Serpentine and quartz (in specular iron).	Stirling mine, St. Lawrence.

III. NEW-YORK SYSTEM.

1. POTSDAM SANDSTONE.

Table Case.

1 Potsdam sandstone (red). Dekalb, St. Lawrence.

2 Potsdam sandstone (grey). Moira, Clinton.

3 Potsdam sandstone (conglomerate). Five miles west of Plattsburgh, Clinton.

4 Potsdam sandstone (red). West-Chazy, Clinton.

5 Potsdam sandstone (with ripplemarks). Port Kent, Clinton.

6 Potsdam sandstone (red). West-Chazy, Clinton.

7 Potsdam sandstone (fragmentary, red). Dekalb, St. Lawrence.

8 Potsdam sandstone. Keeseville, Clinton.

9 Potsdam sandstone (grey). Klip hill, Johnstown, Montgomery.

10 Potsdam sandstone. Lewisburgh furnace, Lewis.

11 Potsdam sandstone (conglomerate). Near Lewisburgh furnace.

12 Potsdam sandstone (conglomerate, grey).

13 Potsdam sandstone (red). Twelve miles west of Plattsburgh, on the Military road.

14 Potsdam sandstone (metamorphic).

15 Potsdam sandstone (grey).

16 Potsdam sandstone (ripplemarks).

17 Potsdam sandstone. Near Lewisburgh furnace, Lewis.

18 Potsdam sandstone (conglomerate). Near Lewisburgh furnace.

19 Potsdam sandstone. Lewisburgh ore bed.

20 Potsdam sandstone. Lafarge's, near Harrisville.

21 Potsdam sandstone. Six miles west of Johnstown, Montgomery.

22 Potsdam sandstone. Turnpike road six miles west of Johnstown, Montgomery.

23 Potsdam sandstone. Klip hill, Johnstown turnpike, Montgomery.

24 Potsdam sandstone. Near Lewisburgh furnace, Lewis.

25 Potsdam sandstone (with Lingulæ). Birmingham, Clinton.

26 Potsdam sandstone. Chazy, Clinton.

27 Potsdam sandstone. Keeseville, Essex.

28 Potsdam sandstone (with Lingulæ). French creek, St. Lawrence.

29 Potsdam sandstone.

30 Potsdam sandstone (with Lingulæ : spotted with manganese). French creek.

31 Potsdam sandstone.

32 Potsdam sandstone. Near Lewisburgh furnace, Lewis.

33 Potsdam sandstone. Port Kent, Essex.

34 Potsdam sandstone (containing concretions).

35 Potsdam sandstone (concretion).

36 Potsdam sandstone. Potsdam.

37 Potsdam sandstone. Saranac.

38 Potsdam sandstone (colored with vegetable matter). Keeseville, Essex.

39 Concretionary carbonate of lime (in Potsdam sandstone).

40 Potsdam sandstone (with concretionary carbonate of lime).

41 Potsdam sandstone (red).

42 Potsdam sandstone (brecciated).

43 Potsdam sandstone (fucoidal).

44 Brecciated potsdam sandstone. Chazy, Clinton.

45 Potsdam sandstone (weathered surface). French creek, Jefferson.

46 Potsdam sandstone (metamorphic).

47 Potsdam sandstone (metamorphic).

Vertical Case.

48 Potsdam sandstone (lowest layer brecciated). Dekalb, St. Lawrence.

49 Potsdam sandstone (massive). Potsdam, St. Lawrence.

50 Potsdam sandstone (ripplemarks). Keeseville, Essex.

51 Potsdam sandstone (with casts of mud furrows).
52 Potsdam sandstone. Washington.
53 Potsdam sandstone (lowest layer conglomeritic). Lewisburgh, Lewis.
54 Potsdam sandstone. Lewisburgh, Lewis.
55 Potsdam sandstone. Lewisburgh, Lewis.
56 Potsdam sandstone. Lewisburgh, Lewis.
57 Potsdam sandstone. Dekalb, St. Lawrence.
58 Potsdam sandstone. Washington.
59 Potsdam sandstone. Chazy.
60 Potsdam sandstone. Keeseville, Essex.
61 Potsdam sandstone. Galway.
62 Potsdam sandstone. Galway.
63 Potsdam sandstone (with fragments of impure limestone). Chazy.
64 Potsdam sandstone (columnar from artificial heat). Keeseville, Essex.

2. CALCIFEROUS SANDSTONE.

Table Case.

1, 2, 3 Calciferous sandstone (conglomeritic). Spruce creek, Salisbury, Herkimer.
4, 5, 6 Calciferous sandstone. Spruce creek, Herkimer.
7 & 8 Calciferous sandstone (porphyritic). Lead mine, Salisbury.
9 & 10 Calciferous sandstone (erratic). East creek, Herkimer.
11 Calciferous sandstone (brown). East of Amsterdam.
12 & 13 Calciferous sandstone. East of Canajoharie.
14 & 15 Calciferous sandstone (with calcareous spar). East of Canajoharie.
16 Calciferous sandstone (with calcareous spar). Railroad, Tripe's hill.
17 & 18 Calciferous sandstone. Canal west of Littlefalls.
19 Calciferous sandstone (with globules of anthracite). Littlefalls.
20 Calciferous sandstone (with anthracite and calcareous spar). Creek at Spraker's basin.

21 Anthracite (from the Calciferous sandstone). Middleville, Herkimer.

22 Calciferous sandstone. West of Littlefalls.

23 Calciferous sandstone (calcareous, with fossils). Quarry at Canajoharie.

24 Calciferous sandstone (calcareous, greenish, upper part of the rock). Canajoharie, near the upper part of the mass.

25 Calciferous sandstone. Near Amsterdam.

26 Calciferous sandstone (with quartz crystals, brown).

27 Calciferous sandstone (with quartz crystals). Middleville.

28 Crystals of quartz (from Calciferous sandstone). Middleville.

29 Calciferous sandstone (with calcareous spar). Littlefalls.

30 Calciferous sandstone (with drops of anthracite). Littlefalls.

31 Calciferous sandstone (calcareous, with *Ophileta*). Quarry at Canajoharie.

32 Calciferous sandstone (calcareous, with fossils).

33 Calciferous sandstone (with *Lingula*). Canajoharie.

34 Calciferous sandstone (with *Orthoceras primigenium*). Opposite Fortplain.

35 Calciferous sandstone (with *Fucoides*). Canajoharie.

36 Calciferous sandstone (upper part of the mass at the quarry). Canajoharie.

37 Calciferous sandstone (shaly, with *Palæophycus tubularis*). Quarry opposite Fortplain.

38 Calciferous sandstone (brecciated). Falls on East-Canada creek, Manheim.

39 Calciferous sandstone (with casts of mud cracks). Creek south of Canajoharie.

40 – 44 From the altered rocks on the Hudson river.

45 Calciferous sandstone (calcareous).

I do not regard it as proved that the last six specimens belong to the Calciferous sandstone proper. J. H.

Vertical Case.

46 CALCIFEROUS SANDSTONE? (a red siliceous limestone). Bellvale, Orange.

47 CALCIFEROUS SANDSTONE (with drusy quartz). Littlefalls.

48 CALCIFEROUS SANDSTONE. Littlefalls.

49 CALCIFEROUS SANDSTONE (with anthracite). Littlefalls.

50 CALCIFEROUS SANDSTONE. Glensfalls.

51 CALCIFEROUS SANDSTONE (with anthracite).

52 CALCIFEROUS SANDSTONE (with trap).

53 CALCIFEROUS SANDSTONE. Canajoharie.

54 CALCIFEROUS SANDSTONE (upper part of the rock). Canajoharie.

55 CALCIFEROUS SANDSTONE. Littlefalls.

56 & 57 CALCIFEROUS SANDSTONE. Canajoharie.

58 CALCIFEROUS SANDSTONE. Newport.

59 CALCIFEROUS SANDSTONE (with anthracite). Littlefalls.

60 CALCIFEROUS SANDSTONE (with calcareous spar).

61 TRAP DYKE (in Calciferous sandstone).

62 CALCIFEROUS SANDSTONE (with anthracite). Three and a half miles north of Littlefalls.

63 TRAP (in Calciferous sandstone). Wellsborough falls.

64 GREENSTONE TRAP (in Calciferous sandstone).

65 CALCIFEROUS SANDSTONE.

66 CALCIFEROUS SANDSTONE (with pearl spar).

67 CALCIFEROUS SANDSTONE (with *Orthoceratite*). Fortplain.

68 CALCIFEROUS SANDSTONE (cherty). Galway.

69 CALCIFEROUS SANDSTONE. Galway.

70 CALCIFEROUS SANDSTONE.

71 & 72 CALCIFEROUS SANDSTONE. Canajoharie.

73 & 74 CALCIFEROUS SANDSTONE. Chazy.

75 CALCIFEROUS SANDSTONE (with sulphate of iron).

76 CALCIFEROUS SANDSTONE (with lenticular carbonate of lime). Middleville.

77 CALCIFEROUS SANDSTONE (with crystals of quartz and lime).

78 HEXAHEDRAL PRISM of CARBONATE OF LIME (from Calciferous sandstone). Middleville.

79 Calciferous sandstone (with pearl spar and lenticular carbonate of lime). Littlefalls.

80 Calciferous sandstone (with pearl spar).

81 Calciferous sandstone (with pearl spar). Littlefalls.

82 Coarse oolite (from the Calciferous sandstone). Littlefalls.

83 Calciferous sandstone. Washington.

84 Calciferous sandstone (*Ophileta*). Near East-Canada creek.

85 Calciferous sandstone. Galway.

86 Calciferous sandstone. Fortplain.

87 Calciferous sandstone.

88 Chert (from Calciferous sandstone). Herkimer.

89 Calciferous sandstone (drab-colored layer, with spar). Depeauville.

90 Calciferous sandstone. Warwick.

91 Calciferous sandstone. Amity.

92 Calciferous sandstone. Littlefalls.

93 Calciferous sandstone. Ogdensburgh.

94 Calciferous sandstone. Galway.

95 Calciferous sandstone. Glensfalls.

96 Calciferous sandstone (oolitic). Galway.

97 Calciferous sandstone (oolitic). Chazy.

98 Calciferous sandstone. Glensfalls.

99 & 100 Calciferous sandstone. Galway.

101 Calciferous sandstone (oolitic). Whitehall.

102 Encrinal mass (in Calciferous sandstone). Chazy.

103 Encrinal layer (in Calciferous sandstone). Chazy.

104 Calciferous sandstone. Fortplain.

105 Calciferous sandstone (with *Orthis*). Chazy.

3. BLACK-RIVER LIMESTONE GROUP,

INCLUDING THE CHAZY, BIRDSEYE AND BLACK-RIVER LIMESTONES.

Table Case.

1 & 2 CHAZY LIMESTONE (lower layers). Chazy, Clinton.

3 CHAZY LIMESTONE (encrinal layers). Chazy, Clinton.

4 CHAZY LIMESTONE (encrinal mass). Chazy, Clinton.

5 ENCRINAL LAYER of the CHAZY (with discs and plates). Chazy.

6 CHAZY LIMESTONE (with fossil shells). Chazy.

7 OOLITIC LIMESTONE (of Chazy). Chazy.

8 OOLITIC LIMESTONE (of the Chazy). Big island, Orange.

9 CHAZY LIMESTONE (compact). Mount Lookout, Orange.

10 POLISHED SURFACE of the Encrinal layer. Chazy, Clinton.

11 & 12 CHAZY LIMESTONE (with *Maclurea magna*). Chazy.

13 & 14 CHAZY LIMESTONE (with fragments of fossils). Chazy.

15 Two specimens of CHAZY LIMESTONE (with fragments of shells). Chazy.

16 Two specimens of CHAZY LIMESTONE (with *Maclurea* and *Raphistoma*). Chazy.

17 CHAZY LIMESTONE (with *Atrypa* and crinoidal columns). Chazy.

18 BIRDSEYE LIMESTONE (with *Orthoceras* and *Phytopsis*). Great bend of the Black river.

19 BIRDSEYE LIMESTONE, (with fossils). Creek near Spraker's basin.

20 BIRDSEYE LIMESTONE (with fragments of trilobites). Watertown, Jefferson.

21 BIRDSEYE LIMESTONE (with obscure fossils). Sugar river, near Boonville.

22 BIRDSEYE LIMESTONE (with *Phytopsis cellulosum*). Near Watertown, Jefferson.

23 & 24 BIRDSEYE LIMESTONE (with *Phytopsis tubulosum*). Fortplain.

25 BIRDSEYE LIMESTONE (with a transverse section of *P. tubulosum*). Fortplain.

26 BIRDSEYE LIMESTONE (with *P. tubulosum*). Fortplain.

27 BIRDSEYE LIMESTONE (with *P. tubulosum*). Near Boonville.

28, 29, 30 BIRDSEYE LIMESTONE. Fortplain.

31 POLISHED SURFACE of Birdseye limestone (exhibiting transverse sections of *P. tubulosum*). Fortplain.

32 & 33 BIRDSEYE LIMESTONE. Near Boonville.

34 BIRDSEYE LIMESTONE (middle part). Near Boonville, Lewis.

35 BIRDSEYE LIMESTONE (with *Phytopsis*). Near Boonville, Lewis.

36 BIRDSEYE LIMESTONE (with *Phytopsis*). Near Amsterdam.

37 BASE of *Phytopsis*. Fortplain.

38 BIRDSEYE LIMESTONE.

39 BLACK-RIVER LIMESTONE (with *Columnaria alveolata*). Watertown, Jefferson.

40 BLACK-RIVER LIMESTONE (with *Columnaria alveolata*). Amsterdam, Fulton.

41 BLACK-RIVER LIMESTONE (upper part, concretionary). North of Amsterdam.

42 BLACK-RIVER LIMESTONE (concretionary). Goshen, Orange.

43 BLACK-RIVER LIMESTONE (with *Ormoceras tenuifilum*). Watertown.

44 BLACK-RIVER LIMESTONE (with *Ormoceras tenuifilum*). Littlefalls.

45 BLACK-RIVER LIMESTONE (with *O. tenuifilum*). West of Littlefalls.

Vertical Case.

46 – 49 CHAZY LIMESTONE (with *Atrypa* and other fossils). Chazy, Clinton.

50 CHAZY LIMESTONE (with *Scalites*). Clinton.

51 CHAZY LIMESTONE (with *Maclurea*). Chazy.

52 CHAZY LIMESTONE (with coral and *Maclurea*). Chazy.

53 CHAZY LIMESTONE (with *Maclurea*). Chazy.

54 CHAZY LIMESTONE (remains of *Atrypa*, etc.). Chazy.

55 & 56 CHAZY LIMESTONE (marble). Isle Lamotte.

57 CHAZY LIMESTONE (with *Orthoceratite*). Chazy.

58 CHAZY LIMESTONE (with remains of fossils). Chazy.

59 CHAZY LIMESTONE (with *Orthoceratite*). Chazy.

60 CHAZY LIMESTONE (with *Orthoceras*). Chazy.

61 CHAZY LIMESTONE (with *Maclurea*). Chazy.

62 CHAZY LIMESTONE (containing *Maclurea*). Chazy.

63 CHAZY LIMESTONE (with remains of *Atrypa*, etc.). Chazy.

64 CHAZY LIMESTONE (with traces of *Maclurea*). Chazy.

65 BIRDSEYE LIMESTONE (weathered surface). Mohawk valley.

66 BIRDSEYE LIMESTONE (with *Maclurea*). Amsterdam, Fulton.

67 BIRDSEYE LIMESTONE (with obscure remains of fossils, *Cytherina*, etc.). Near Watertown.

68 BIRDSEYE LIMESTONE (with *Phytopsis*). Chazy(?).

69 BIRDSEYE LIMESTONE (upper layer, with *Leptæna sericea*). Near Middleville.

70 BIRDSEYE LIMESTONE. Chazy.

71 BIRDSEYE LIMESTONE (with *Streptelasma*). Dunkirk, Lewis.

72 BIRDSEYE LIMESTONE (with *Phytopsis* and other fossils). Watertown, Jefferson.

73 BIRDSEYE LIMESTONE (with coral). Lafargeville, Jefferson.

74 HORNSTONE (position uncertain). Goshen, Orange.

75 BIRDSEYE LIMESTONE. Chazy, Clinton.

76 BIRDSEYE LIMESTONE (with *Phytopsis*). Watertown, Jefferson.

77 BIRDSEYE LIMESTONE (with *Phytopsis*). Fortplain.

78 BIRDSEYE LIMESTONE (with *Phytopsis tubulosum*). Watertown.

79 BIRDSEYE LIMESTONE (with *Phytopsis cellulosum*). Fortplain.

80 BIRDSEYE LIMESTONE (iridescent). Fortplain.

81 LIMESTONE (with scratches). Crownpoint.

82 LIMESTONE (with drift scratches). Pillar point.

83, 84, 85 LIMESTONE (with drift scratches). Amsterdam, Fulton.

The last four specimens appear to belong to the Trenton and Black-river limestones.

86 & 87 BLACK-RIVER LIMESTONE (with *Columnaria*). Chazy, Clinton.

88 BLACK-RIVER LIMESTONE (with *Columnaria*). Dry Moose river, Lewis.

89 BLACK-RIVER LIMESTONE (with *Columnaria*). Watertown, Jefferson.

90 – 94 BLACK-RIVER LIMESTONE (with *Orthoceras*). Watertown.

95 BLACK-RIVER LIMESTONE. Dry Moose river, Lewis.

96 BLACK-RIVER LIMESTONE. Trip hill.

97 BLACK-RIVER LIMESTONE (with *Orthoceras*). Watertown.

98 BLACK-RIVER LIMESTONE (with *Columnaria*). Watertown.

99 & 100 BLACK-RIVER LIMESTONE (concretionary). Johnsville.

101 Black-river limestone. Johnsville.

102 Black-river limestone (accretionary). Littlefalls.

103 Black-river limestone (concretionary). Amsterdam, Fulton.

104 Black-river limestone (concretionary). Littlefalls.

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4. TRENTON LIMESTONE.

Table Case.

1, 2, 3 Trenton limestone (with *Chætetes*). Newport, Herkimer.

4 Large hemispherical form of *Chætetes lycoperdon*). Newport.

5 The same (weathered specimen). Middleville, Herkimer.

6 Trenton limestone (with *Chætetes*). Middleville.

7 & 8 *Chætetes* (hemispherical form).

9 Trenton limestone (with branching forms of *Chætetes lycoperdon*). Boonville, Sugar river.

10 Trenton limestone (with branching or ramose forms of *C. lycoperdon*). Herkimer, Herkimer.

11 Trenton limestone (with similar forms). Lowville, Lewis.

12 Trenton limestone (with *Streptelasma corniculum*).

13 Trenton limestone (encrinal). Creek at Spraker's basin.

14 Trenton limestone (encrinal). Remsen, Oneida.

15 Trenton limestone (with fragments of trilobites).

16 Trenton limestone (with fragments of *Trinucleus*). Near Middleville.

17 Trenton limestone (with head of *Calymene senaria*). Middleville.

18 Trenton limestone (with *Calymene senaria*). Middleville.

19 Trenton limestone (with fragments of *Calymene*).

20 & 21 Trenton limestone (with caudal shield of *Isotelus gigas*). Middleville.

22 Trenton limestone (with fragments of *Isotelus* and *Ceraurus*). One mile east of Florida, Fulton.

23 Trenton limestone (with *Isotelus gigas*). Quarry north of Littlefalls.

24 & 25 Trenton limestone (caudal shield of *Isotelus gigas*). Middleville.

26 TRENTON LIMESTONE (with middle lobe of the buckler of *I. gigas*). Middleville.

27 TRENTON LIMESTONE (with *Avicula trentonensis*). Middleville.

28 TRENTON LIMESTONE (with fossils). Middleville.

29 TRENTON LIMESTONE (with *Leptæna sericea*). Fortplain.

30 TRENTON LIMESTONE (with *Leptæna sericea*). Middleville.

31, 32, 33 TRENTON LIMESTONE (with *Leptæna*, etc.). Middleville.

34 TRENTON LIMESTONE (with *Leptæna sericea*). Fortplain.

35 TRENTON LIMESTONE (with *Leptæna alternata*). Near Middleville.

36 TRENTON LIMESTONE (with *Leptæna alternata*). Middleville.

37 & 38 TRENTON LIMESTONE (with *Orthis pectinella*). Middleville.

39 TRENTON LIMESTONE (with *O. pectinella* and fragments). Middleville.

40 TRENTON LIMESTONE (with *O. testudinaria*). Byers's quarry, north of Littlefalls.

41 TRENTON LIMESTONE (with *O. testudinaria*). Watertown, Jefferson.

42 TRENTON LIMESTONE (with *Delthyris lynx*).

43 TRENTON LIMESTONE (with *Atrypa extans* and impressions of *Orthis*). Near Boonville.

44 TRENTON LIMESTONE (with *Atrypa extans*). Watertown.

45 TRENTON LIMESTONE (with *Pleurotomaria*, etc.). Watertown.

46 TRENTON LIMESTONE (with *Pleurotomaria* and *Subulites*). Watertown.

47 TRENTON LIMESTONE (with *Endoceras proteiforme*). Middleville.

48 TRENTON LIMESTONE (with fragment of an *Orthoceras*). Watertown.

49 TRENTON LIMESTONE (with fragment of *Orthoceras*). Middleville.

50 TRENTON LIMESTONE (with fragment of *Orthoceras*). Fortplain.

51, 52, 53 TRENTON LIMESTONE (with fragments of *Orthoceras*). Middleville.

54 TRENTON LIMESTONE (with fragments of *Endoceras proteiforme*). Middleville.

55 TRENTON LIMESTONE (with fragments of *O. junceum*). Watertown.

56 *Endoceras* of the Trenton limestone.

57 TRENTON LIMESTONE (with fragment of *Orthoceras ?*).

Vertical Case.

58 TRENTON LIMESTONE (with *Isotelus*). Creek at Spraker's basin, Fulton.

59 Fragment of *Orthoceras.*

60 TRENTON LIMESTONE (with *Leptæna*, etc.).

61 Fragment of *Orthoceras* from the Trenton limestone.

62 TRENTON LIMESTONE (with fossils).

63 TRENTON LIMESTONE (with *Isotelus*). Glensfalls.

64 TRENTON LIMESTONE (with *Isotelus*). Middleville.

65, 66, 67 TRENTON LIMESTONE. Glensfalls.

68 TRENTON LIMESTONE. Baker's falls, Washington.

69 TRENTON LIMESTONE (with *Trinucleus*). Locality unknown.

70 TRENTON LIMESTONE (with fossils). Locality unknown.

71 TRENTON LIMESTONE (with *Chætetes lycoperdon*). Jacksonburgh, Herkimer.

72 TRENTON LIMESTONE (with *Trinucleus* and other fossils). Near Boonville?

73 TRENTON LIMESTONE (with *Chætetes lycoperdon*).

74 TRENTON LIMESTONE (with *Calymene senaria*). Stony creek, below Middleville.

75 TRENTON LIMESTONE (with *Calymene senaria*).

76 & 77 TRENTON LIMESTONE (with *Chætetes*).

78 – 81 Hemispherical *Chætetes* from the Trenton limestone.

82 TRENTON LIMESTONE (with *Orthoceras*).

83 *Orthoceras.*

84 TRENTON LIMESTONE (with *Orthoceras*). Dry Moose river, Lewis.

85 TRENTON LIMESTONE (with *Orthoceras*). Middleville.

86 TRENTON LIMESTONE (with *Orthoceras*). Watertown.

87 TRENTON LIMESTONE (with *Subulites*). Watertown.

88 TRENTON LIMESTONE. Sugar river, near Boonville.

89 TRENTON LIMESTONE (with *Pleurotomaria*, *Murchisonia*, etc.). Trenton.

90 TRENTON LIMESTONE (with remains of *Trinucleus*, etc.). Tribe's hill.

91 Trenton limestone (with *Orthoceras*).

92 Trenton limestone (with fragments of fossils).

93 Trenton limestone (with *Orthis pectinella*).

94 Trenton limestone (with *Leptæna alternata*, young shell).

95 Trenton limestone (with *Atrypa extans*).

96 Trenton limestone (with *Pleurotomaria lenticularis*).

97 Trenton limestone (with *Leptæna sericea*).

98 Trenton limestone (with *Leptæna sericea* and others).

99 Trenton limestone (with *Orthis testudinaria*). Graveville creek, on West-Canada creek.

100 Trenton limestone (with *Leptæna alternata*).

101 Trenton limestone (with *Orthis* and *Leptæna*). Falls of Sugar river, near Boonville.

102 Trenton limestone (with *Leptæna alternata*). Stony creek, below Middleville.

103 Trenton limestone (with *Orthis* and *Leptæna*). Dry Moose river, Lewis.

104 Trenton limestone (with fragments of fossils).

105 Trenton limestone (with *Chætetes lycoperdon*).

106 Trenton limestone (with remains of fossils).

107 Hemispherical form of *Chætetes*, from the Trenton limestone.

108 Trenton limestone (with *Conularia*). Sugar river, near Boonville, Lewis.

109 Trenton limestone (with remains of *Leptæna*).

110 Trenton limestone (with *Leptæna sericea*). Sugar river, Boonville.

111 Trenton limestone (with *Orthis pectinella*). Middleville.

112 Trenton limestone (with *Leptæna sericea*). Dry Moose river, Lewis.

113 Trenton limestone (with graptolites). Trenton falls.

114 Trenton limestone (with spar). Sugar river, Boonville.

115 Trenton limestone (with *O. testudinaria*). Fortplain.

116 Trenton limestone (with *O. testudinaria*).

117 Trenton limestone (with encrinal and other remains).

118 Trenton limestone (with obscure *Leptæna alternata*). Martinsburgh, Lewis.

119 Trenton limestone (polished specimen). Boonville, Sugar river.

120 Trenton limestone (with encrinal stems).

121 Trenton limestone (with caudal shield of *Illænus crassicauda*).

122 Trenton limestone (with encrinal fragments). Three and a half miles north of Trenton village.

123 Trenton limestone (with fragment of *Isotelus gigas*). Near Boonville, Black river.

124 Trenton limestone (with fragments of *Calymene*). Middleville.

125 Trenton limestone (with encrinal and other remains).

126 Trenton limestone (with fragments of *Orthoceras*, *Bucania*, etc.). Watertown.

127 Trenton limestone (with *Orthis*, etc.). Watertown.

128 Trenton limestone (with crinoidal fragments and concretions). Creek at Spraker's basin.

129 Trenton limestone (with casts of *Isotelus gigas*). Plattsburgh.

130 Trenton limestone (with *Orthis pectinella*).

131 Trenton limestone (with obscure fossils). Dry Moose river, Lewis.

132 Trenton limestone (with *Orthis*). Falls of Sugar river, near Boonville.

133 Trenton limestone (with fragments of *Pleurotomaria*). Watertown.

134 Trenton limestone (with fragments of fossils, crystalline).

135 Trenton limestone (with *Orthoceras*). Middleville.

136 Trenton limestone (with spar). Middleville.

137 Trenton limestone (with fragments of fossils). Middleville.

138 Trenton limestone (with calc spar). Falls at Lowville.

139 Trenton limestone (with base of *Chætetes* and shells).

140 Trenton limestone (with fragments of fossils, crystalline). Hawkins's mill, Boonville road.

141 Trenton limestone (with *Leptæna* and fragments of other fossils). Lower falls, Lansing's kill.

142 – 145 Trenton limestone (crinoidal fragments). Quarry near Trenton village.

146 & 147 Trenton limestone (mass of fossil fragments, crystalline). Near Trenton village.

148 TRENTON LIMESTONE (with fossils and concretions). Amsterdam, Fulton.

149 TRENTON LIMESTONE (with spar). Martinsburgh, Lewis.

150 TRENTON LIMESTONE (with lead ore). Martinsburgh.

151 TRENTON LIMESTONE (with *Chætetes*, branched variety).

152 TRAP DYKE (in Trenton limestone). East-Canada creek.

153 & 154 PORPHYRY (in Trenton limestone). Essex.

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5. UTICA SLATE.

Table Case.

1 UTICA SLATE (with graptolites). East-Canada creek.

2 UTICA SLATE (with fragments of *Calymene beckii*). Mohawk valley.

3 UTICA SLATE (with *Leptæna sericea*). Creek at Johnstown.

4 UTICA SLATE (with *Orthis testudinaria*). Creek at Johnstown.

5 UTICA SLATE (with heads of *Calymene beckii*). Oxtungo creek, south of Fortplain.

6 UTICA SLATE (with *Calymene beckii*). Oxtungo creek, near Fortplain.

7 UTICA SLATE (with *Graptolithus lævis*). Turin, Lewis.

8 UTICA SLATE (with graptolites). Johnstown creek.

9 & 10 UTICA SLATE (with graptolites). Oxtungo creek, south of Fortplain.

11 UTICA SLATE (with graptolites). Creek north of Herkimer village.

12 UTICA SLATE (with *Orthoceras*)) Turin, Lewis.

13 UTICA SLATE (with *Orthoceras*). East-Canada creek.

14 UTICA SLATE (with graptolites and *Pleurotomaria*). Coldspring, Montgomery.

15 UTICA SLATE (with *Calymene*). Near Amsterdam.

16 UTICA SLATE (with fragments of graptolites).

17 UTICA SLATE (with head of *Calymene beckii*). Turin, Lewis.

18 UTICA SLATE (with *Calymene beckii*). Whetstone creek, Lewis.

19 UTICA SLATE (with fragments of *Calymene*). Whetstone creek.

20 UTICA SLATE (with fragments of *Calymene beckii*). Pulaski, Oswego.

21 Utica slate (with fragment of *Orthoceras*). East-Canada creek, near Manheim bridge.

22 & 23 Utica slate (with fragments of *Orthoceras*). Whetstone creek, Lewis.

24 Utica state. Loraine, Jefferson.

25 Utica slate (with fragments of *Calymene*, *Graptolithus*, etc.). Pulaski, Loraine, Jefferson.

26 Utica slate (with fragments of fossils). Loraine, Jefferson.

27 Utica slate (with fossils in an erratic mass). Near Littlefalls.

28 Utica slate (with *Orthoceras*). Whetstone creek, Lewis.

29 Utica slate (compact, with iron pyrites). Brocket's bridge, East-Canada creek.

30 Utica slate (compact, with a concretion). Near Middleville.

31 Utica slate. Canajoharie.

32 Utica slate (with graptolites).

33 & 34 Utica slate (with graptolites and crystals of gypsum). Baker's falls, Washington.

35 Utica slate (glazed). Chatham, Columbia.

36 Utica slate (glazed). Near Poughkeepsie, Dutchess.

37 Utica slate. Reed's spring, Washington.

38 Utica slate (with graptolites). Lower falls of Kinderhook creek, Columbia.

39 Utica slate (metamorphic). Near Hudson, Columbia.

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6. HUDSON-RIVER GROUP.

Table Case.

1 Hudson-river slate (with *Chætetes*, branched form). Loraine, Jefferson.

2 Hudson-river slate (with encrinal stems and obscure fossils). Loraine.

3 Hudson-river slate (with encrinal fragments). Lee centre.

4 Hudson-river slate (with obscure remains). Loraine.

5 Hudson-river shale (with fragments of fossils). Pulaski, Oswego.

6 Hudson-river shale, calcareous (with encrinal stems and fragments). Pulaski.

7 & 8 HUDSON-RIVER SHALE, calcareous (with *Leptæna alternata*). Pulaski.

9 HUDSON-RIVER CALCAREOUS SANDSTONE (with *Modiolopsis*). Pulaski.

10 HUDSON-RIVER CALCAREOUS SANDSTONE (with *Ambonychia* & *Orthis*). Turin, Lewis.

11 HUDSON-RIVER CALCAREOUS SANDSTONE (with fragments of fossils). Walden.

12 HUDSON-RIVER CALCAREOUS SANDSTONE (with *Modiolopsis*). Loraine.

13 HUDSON-RIVER SANDSTONE, calcareous and shaly, decomposing (with shells). Pulaski, Oswego.

14 HUDSON-RIVER SANDSTONE (with fragments of *Leptæna*, etc.). Pulaski.

15 HUDSON-RIVER SANDSTONE (with obscure impressions of *Tentaculites* and *Leptæna*). Whetstone creek, Turin, Lewis.

16 HUDSON-RIVER SANDSTONE, shaly and calcareous, decomposing (with *Ambonychia* and numerous other fossils). Pulaski, Oswego.

17 SHALY & CALCAREOUS SANDSTONE (with *Modiolopsis*, etc.). Pulaski.

18 HUDSON-RIVER CALCAREOUS SANDSTONE (with fossil fragments). Pulaski.

19 HUDSON-RIVER CALCAREOUS SANDSTONE, decomposing (with impressions of *Orthis testudinaria*). Pulaski.

20 HUDSON-RIVER CALCAREOUS SANDSTONE (with encrinal joints, *Orthis*, etc.). Loraine, Jefferson.

21 HUDSON-RIVER CALCAREOUS SANDSTONE (with encrinal joints, *Ambonychia*, etc.). Loraine.

22 HUDSON-RIVER CALCAREOUS SANDSTONE (with *Ambonychia radiata*). Loraine.

23 HUDSON-RIVER CALCAREOUS SHALE (with encrinal columns and other fossils). Loraine.

24 HUDSON-RIVER SANDSTONE (with obscure remains of *Chætetes*, *Orthis*, etc.). Loraine.

25 HUDSON-RIVER SANDSTONE (with *Ambonychia* and *Orthonota*). Talcott's quarry, near Rome, Oneida.

26 HUDSON-RIVER SANDSTONE (with *Ambonychia*). Talcott's quarry.

27 HUDSON-RIVER SANDSTONE (with *Modiolopsis*). Talcott's quarry.

28 & 29 HUDSON-RIVER CALCAREOUS SANDSTONE (with *Leptæna alternata*). Pulaski, Oswego.

30 HUDSON-RIVER CALCAREOUS SANDSTONE (with obscure fossil impressions). Falls of Salmon river.

31 HUDSON-RIVER CALCAREOUS SHALE (with obscure fossils). Northwest corner of Columbia county.

32 HUDSON-RIVER CALCAREOUS SHALE (with crinoidal plates and shells). Pulaski, Oswego.

33 HUDSON-RIVER DECOMPOSING SHALY SANDSTONE (with *Cyrtolites ornatus*). Loraine, Jefferson.

34 HUDSON-RIVER CALCAREOUS SANDSTONE (with *Bellerophon bilobatus*). Loraine.

35 HUDSON-RIVER SANDSTONE (with *Orthoceras*). Oneida, one mile east of the poor-house.

36 HUDSON-RIVER SHALY SANDSTONE, decomposing (with *Leptæna alternata*). Pulaski, Oswego.

37 HUDSON-RIVER SHALY SANDSTONE, decomposing (with *Leptæna*, *Ambonychia*, etc.). Pulaski.

38 HUDSON-RIVER CALCAREOUS SANDSTONE (with fossil fragments). Pulaski.

39 HUDSON-RIVER SANDSTONE (with *Leptæna alternata*, etc.). Loraine.

40 HUDSON-RIVER CALCAREOUS SANDSTONE (with *Chætetes* & fragments). Talcott's quarry, near Rome.

41 HUDSON-RIVER CALCAREOUS SANDSTONE (with *Ambonychia*). One mile east of the poor-house, Oneida.

42 HUDSON-RIVER CALCAREOUS SANDSTONE (with obscure impressions).

Vertical Case.

43 SHALY SANDSTONE. Snake hill, Saratoga.

44 GREEN SHALE. Snake hill.

45 GRAY SANDSTONE. Redhook, Dutchess.

46 GREEN SHALE. Snake hill, Saratoga.

47 & 48 BLACK SLATE (with graptolites). Northwest corner of Columbia county.

49 SHALE. Banks of North river, Dutchess.

50 GREEN SLATE. Cornwall, Orange.

51 Green (calcareous) shale (with fossils, *Nucula*, etc.). Whitt's quarry.

52 Siliceous black slate. Clermont, Columbia.

53 Green siliceous slate. Montrose, Dutchess.

54 Sandstone, slaty (slaty graywacke). Redhook.

55 Shaly sandstone. Stockport, Columbia.

56 Black slate. Hydepark, Dutchess.

57 Sandstone (compact and partially altered). Bloomingrove, Orange.

58 Siliceous slate. Cornwall, Orange.

59 Sandstone (laminated and micaceous). Minisink.

60 Slate, black (thinly laminated). Clermont, Columbia.

61 Slate, black (thinly laminated). Sugarloaf, Orange.

62 Sandstone (laminated and micaceous). Walden.

63 Slaty sandstone (with mica and grains of anthracite). Walden.

64 Flinty slate (black). Hudson, Columbia.

65 Flinty slate (greenish). Hudson.

66 Laminated sandstone. Schoharie.

67 Gray sandstone. Banks of Hudson river, Dutchess.

68 Black slate. Hillsdale, Columbia.

69 Gray sandstone (siliceous and partially altered). Ghent, Columbia.

70 Gray sandstone (conglomeritic). Banks of Hudson river, Dutchess.

71 Gray sandstone (slightly conglomeritic and laminated). Hydepark landing, Dutchess.

72 Siliceous slate (with copper and iron pyrites). Near Lower Redhook landing.

73 Flinty slate. Near Hudson, Columbia.

74 Brown jaspery slate. Near Kinderhook creek, Chatham, Columbia.

75 Glazed slate. Near Rider's mills, Chatham.

76 Glazed slate. One mile south of Hudson, Columbia.

77 Glazed slate, greenish (shining argillite). Rider's mills, Chatham.

78 Siliceous and glazed slate (with limestone). Chatham.

79 Quartz crystals, in cavities of quartz. Near Lansingburgh.

80 Red slate. One mile south of Hampton, Washington.

81 Siliceous slate. Lower Redhook landing, Dutchess.

82 Slate. Union corner, Hydepark, Dutchess.

83 Siliceous slate (greenish). Banks of Hudson river, Dutchess.

84 Slate with iron pyrites (thinly laminated). Hillsdale, Columbia.

85 Black slate (thinly laminated). Hillsdale.

86 Roofing slate. Gillet's quarry, Lebanon, Columbia.

87 Slate (micaceous and laminated). Redhook, Dutchess.

88 & 89 Talcose slate (contorted). Whiting's pond, Canaan, Columbia.

90 Green slate, siliceous. Near Albany.

91 Red jaspery slate. Near Lower Redhook landing, Dutchess.

92 Brown jaspery slate. Bloomingrove, Orange.

93 Slate with cast of mud-furrows. Frankfort creek, Herkimer.

93 Slaty sandstone. Rogers's creek.

94 Siliceous slate with irregular surface (mud markings). Dam on Mad river, one mile and a half north of Camden, Oneida.

95, 96, 97 Black slate (with satin spar). St. Albans, Vermont.

98 Siliceous slate (altered). Willsborough, Essex.

99 Sandsone (gray, siliceous). Oneida creek.

100 Red slate. Washington?

101 Greenish sandstone (argillaceous). Falls of Salmon river, Oswego.

102 Greenish sandstone (with surface markings). Falls of Salmon river.

103 Ferruginous sandstone (with quartz veins).

104 Green slate. Ridge mill near Rome, Oneida.

105 Shaly sandstone (with quartz crystals).

106 & 107 Green shaly sandstone (with calcareous spar).

108 & 109 Green shale. Barney's, four miles north of Rome.

110 Compact dark slate. Summit pond, Argyle, Washington.

111 Dark green slate. Wynn creek.

112 Black thinly laminated slate. Vanhorn's mill near Rome.

113 Compact siliceous slate. Near Rome, Oneida.

114 Arenaceous limestone (with *Ambonychia radiata* and *Cyrtolites ornatus*). Lewis county.

115 Orthoceratite. Lewis county.

116 Shaly sandstone (with *Ambonychia radiata*). Loraine, Jefferson.

117, 118, 119 Sandy shale (with crinoidal joints, *Orthis*, etc.). Loraine.

120 Shaly limestone (with *Orthis*, *Orthoceras*, etc.). Loraine.

121 Gray sandstone (with fossils). One mile west of Constableville, Lewis.

122 Siliceous mass in black shale. Lansingburgh, Rensselaer.

123 Slaty argillaceous limestone. Centre falls, Greenwich, Washington.

124 Sandstone (with small branching *Chætetes lycoperdon*). Little Sandy creek, Oswego.

125 Calcareous sandstone (with *Ambonychia radiata*).

126 Gray sandstone (with *Ambonychia*, etc.). Talcott's quarry near Rome, Oneida.

127 Black slate (thinly laminated). Vanhorn's mill near Rome.

128 Grayish green shale. Snake hill, Saratoga.

129 Calcareous shale (with columns of *Heterocrinus*). Hampton spring, Oneida.

130 Shaly sandstone (with *Orthoceras*). Loraine, Jefferson.

131 Shaly sandstone (with *Modiolopsis ovata*). Loraine.

132 Calcareous sandstone (with *Ambonychia radiata*). Pulaski, Oswego.

133 Shaly sandstone (with *Leptæna sericea*). Four miles west of Copenhagen, Lewis.

134 Compact sandstone. Talcott's quarry near Rome.

135 Green shale. Saugerties, Ulster.

136 Gray sandstone (with concretion). Near Rome, Oneida.

137 Limestone with fossils (intercalated with the Hudson-river shales). Near Barnegat, Dutchess.

138 Sandstone (with *Orthoceratites*, *Cyrtolites*, etc.). Turin, Lewis.

139 Shaly sandstone (ferruginous and decomposing). Loraine ?

140 Gray sandstone (with fragments of fossils). Five miles west of Constableville, Lewis.

141 Green siliceous slate (whetstone slate). Northwest corner of Columbia county.

142 Compact shaly sandstone (with quartz crystals). Normanskill, near Albany.

143 Glazed slate. Near Hudson.

144 Thinbedded sandstone (with fossils). Near Russia, Herkimer.

145 Slaty calcareous rock (with *Orthis testudinaria*). Lewis.

146 Siliceous limestone (interstratified with slate). Merino hill, Columbia.

147 Shaly sandstone. Rogers's creek, Oneida.

CATALOGUE OF SPECIMENS

IN THE

Palæontological Department

OF THE

GEOLOGICAL SURVEY.

By James Hall.

Of many of the specimens here enumerated, there are two, three, five, and sometimes ten, illustrating the character and aspect of the fossil in its principal varieties.

Two or three specimens here given as in the State Collection, have, since the printing of my report, been withdrawn by Dr. CRAWE, who had merely deposited them in the Collection. This fact I did not know at the time of writing.

FOSSILS.

1. POTSDAM SANDSTONE.

PLANTS.

Palæontology—Vol. I.

1	1	Scolithus linearis.		p. 2

BRACHIOPODA.

2	1	Lingula prima. One specimen.	Keeseville, Essex county.	3
3	2	Lingula antiqua. Two specimens in friable sandstone.	Hammond, St. Lawrence.	3

2. CALCIFEROUS SANDSTONE.

PLANTS.

4	1	Palæophycus tubularis. Four specimens.	Canajoharie and Fortplain.	7
5	2	Palæophycus irregularis. One specimen.	Near Keeseville.	8
6	1	Buthotrephis antiquata. One specimen.	Chazy, Clinton.	8

GASTEROPODA.

8	1	Euomphalus uniangularis. A plaster cast.		9
9	1	Maclurea sordida.	Mohawk valley.	10
11	1	Ophileta levata. One specimen.	Near Fortplain.	11
12	2	Ophileta complanata. One specimen.	Mohawk valley.	11

CEPHALOPODA.

				Palæontology—Vol. I.
16	1	Orthoceras primigenium. Two specimens.	Near Fortplain.	p. 13
17	2	Orthoceras laqueatum. One specimen (at present in State Collection).		13

3. CHAZY LIMESTONE.

CORALS.

18	1	Retepora incepta. One specimen.	Chazy.	15
19	2	Retepora gracilis.		15
21	1	Stictopora fenestrata. One specimen.	Chazy.	16
23	1	Streptelasma expansa. Two specimens.	Chazy.	17
24	1	Chætetes —— ? One specimen.	Chazy.	18

CRINOIDEA.

25	1	Actinocrinus tenuiradiatus. Several specimens.	Chazy.	18

BRACHIOPODA.

28	1	Leptæna plicifera.	Chazy.	19
29	2	Leptæna incrassata. Three specimens.	Chazy.	19
30	3	Leptæna fasciata.	Chazy.	20
31	1	Orthis costalis.		20
32	1	Atrypa dubia. One specimen.	Chazy.	21
33	2	Atrypa acutirostra. Several specimens in stone.	Chazy.	21
34	3	Atrypa plena. Several specimens.	Chazy.	21
35	4	Atrypa plicifera.	Chazy.	22

				PALÆONTOLOGY—Vol. I.
36	5	ATRYPA ALTILIS. Several specimens.	Chazy.	p. 23
38	1	METOPTOMA? DUBIA.	Chazy.	23

CRUSTACEA.

39	1	ILLÆNUS ARCTURUS. One specimen.	Chazy.	23
40	2	ILLÆNUS CRASSICAUDA? One specimen. Probably a distinct species from *I. crassicauda.*	Chazy.	24
41	1	ASAPHUS? OBTUSUS. One specimen.	Chazy.	24
42	2	ASAPHUS MARGINALIS. One specimen.	Chazy.	24
43	1	ISOTELUS GIGAS? One specimen.	Chazy.	25
44	2	ISOTELUS CANALIS. Caudal extremity and labrum.	Chazy.	25
45	1	CERAURUS? A fragment of the lateral spine of the buckler.	Chazy.	25

GASTEROPODA.

46	3	MACLUREA MAGNA. Several specimens, mostly denuded of the shell: a single plaster cast of a specimen retaining the shell.	Chazy.	26
47	1	SCALITES ANGULATUS. Several specimens, longitudinal sections, etc.	Chazy.	27
48	1	RAPHISTOMA STRIATA.	Chazy.	28
49	2	RAPHISTOMA STAMINEA.	Chazy.	29
50	3	RAPHISTOMA PLANISTRIA.	Chazy.	30
51	4	RAPHISTOMA PLANISTRIA, *var.* PARVA.	Chazy.	30
52	2	PLEUROTOMARIA BIANGULATA. A fragment.	Chazy.	31
53	3	PLEUROTOMARIA ——? Fragment.	Chazy.	31
54	4	PLEUROTOMARIA ANTIQUATA. The only known specimen.	Chazy.	31

				Palæontology—Vol. I.
55	1	Capulus auriformis. One specimen.	Galway, Saratoga.	p. 31
57	1	Bucania sulcatina. One specimen.	Chazy.	32
58	2	Bucania rotundata. A cast.	Chazy.	33

CEPHALOPODA.

59	3	Orthoceras rectiannulatum.	Chazy.	34
60	4	Orthoceras subarcuatum.	Chazy.	34
61	5	Orthoceras tenuiseptum.	Chazy.	35

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4. BIRDSEYE LIMESTONE.

PLANTS ?

64	1	Phytopsis tubulosum. Several specimens.	Mohawk valley.	38
65	2	Phytopsis cellulosum. Several specimens.	Watertown & Mohawk valley.	39

ACEPHALA.

66	1	Modiola ? obtusa.	Watertown, Jefferson.	40

GASTEROPODA.

68	3	Murchisonia ventricosa.	Watertown.	41
69	4	Murchisonia perangulata.	Watertown.	41
73	6	Pleurotomaria quadricarinata.	Watertown.	43
74	7	Pleurotomaria umbilicata.	Watertown.	43
75	8	Pleurotomaria ? nodulosa.	Watertown.	44
76	9	Pleurotomaria ? obsoleta.	Watertown.	44

CRUSTACEA.

77	1	Cytherina. A fragment of limestone, with numerous fragments of single valves.	Watertown.	44

CEPHALOPODA.

78	8	Orthoceras multicameratum.	Watertown.	45

CORALS OF THE BIRDSEYE & BLACK-RIVER LIMESTONES.

				Palæontology—Vol. I.
80	1	Columnaria alveolata.	Mohawk valley.	p. 47
		Specimens from Watertown, Mohawk valley, &c.: one mass weighing 1500 pounds.		
81	1	Stromatocerium rugosum.	Watertown, Chazy, &c.	48
83	2	Streptelasma profunda.	Manheim, East-Canada creek.	49
		A slab of limestone containing the specimens figured in the Report.		
84	3	Stictopora labyrinthica.	Chazy.	50
85	3	Stictopora ramosa.	Watertown.	50

CEPHALOPODA.

86	1	Lituites undatus.	Watertown.	52
		Plaster casts of two specimens.		
87	1	Lituites convolvans?	Watertown.	53
		Fragments of specimens, and cast of a specimen, the original in the Albany Institute Collection.		
88	1	Gonioceras anceps.	Watertown.	54
89	1	Ormoceras tenuifilum.	Watertown.	55
		Several specimens, showing varieties of appearance due to weathering.		
92	1	Endoceras subcentrale.	Watertown.	59
		Fragment.		
96	10	Orthoceras fusiforme.	Watertown.	60

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5. TRENTON LIMESTONE.

PLANTS.

97	2	Buthotrephis gracilis.	Jacksonburgh, Herkimer.	62
99	3	Palæophycus rugosus.	Below Prospect hill.	63
100	4	Palæophycus simplex.	Middleville.	63

CORALS.

101	2	Chætetes lycoperdon.		64
		Several specimens illustrating its modes of growth, form, etc.; also several western forms, showing some variation in the mode of growth in numerous localities.		
105	3	Streptelasma corniculum.	Middleville, Herkimer.	69

				Palæontology—Vol. I.
107	5	Streptelasma multilamellosa.	Watertown.	p. 70
108	6	Streptelasma parvula. Several specimens.	Middleville.	71
111	1	Escharopora recta. A large perfect specimen.	Jacksonburgh.	73
113	5	Stictopora? acuta.	Lowville, Lewis.	74
114	6	Stictopora elegantula.	Middleville.	75
118	1	Intricaria? reticulata.	Watertown.	77

CRINOIDEA.

122	1	Schizocrinus nodosus. One specimen with the cup, Glensfalls; fragments of columns, Glensfalls, Middleville, &c.	Glensfalls and Middleville.	81
123	1	Poteriocrinus alternatus. Fragment of column.		83
126	2	Schizocrinus ——? The arms and part of cup.	Sugar river, Lewis.	86
127	1	Echino-encrinites anatiformis.	Turin, Lewis.	89

BRACHIOPODA.

131	5	Lingula riciniformis.	Middleville, Herkimer.	95
133	7	Lingula quadrata. A specimen with both valves.	Lewis county.	96
136	10	Lingula obtusa.	Middleville.	98
137	11	Lingula crassa.		98
138	2	Orbicula? filosa.	Middleville.	99
140	4	Orbicula (Trematis) terminalis.	Middleville.	100
141	4	Leptæna alternata. Several specimens from Middleville, Watertown, &c.; and from Cincinnati (Ohio), Maysville (Ia.), and other western localities.	Middleville & Watertown.	102
142	5	Leptæna camerata.	Trenton falls.	106
143	6	Leptæna deltoidea.	Middleville and Trenton falls.	106
144	7	Leptæna tenuistriata.		108
145	8	Leptæna alternistriata.	Cincinnati, Ohio.	109

146	9	LEPTÆNA SERICEA. Several specimens from Middleville and Lowville, and from Cincinnati and other places in Ohio.	Middleburgh and Lowville.	p. 110
147	10	LEPTÆNA FILITEXTA.	Middleville.	111
148	11	LEPTÆNA PLANUMBONA. Two specimens.	Cincinnati, Ohio.	112
151	14	LEPTÆNA PLANOCONVEXA.	Cincinnati, Ohio.	114
155	2	ORTHIS TESTUDINARIA. Several specimens from Middleville, Cincinnati (Ohio), &c.	Middleville.	117
162	9	ORTHIS TRICENARIA.	Middleville.	121
163	10	ORTHIS PLICATELLA. Several specimens from Cincinnati and Oxford, Ohio.		122
164	11	ORTHIS PECTINELLA. Three specimens.	Sugar river near Boonville.	123
165	12	ORTHIS PECTINELLA, *var.* SEMIOVALIS.		
168	15	ORTHIS SUBQUADRATA.	Cincinnati and Oxford, Ohio.	126
169	16	ORTHIS OCCIDENTALIS.	Cincinnati and Oxford, Ohio.	127
170	17	ORTHIS SINUATA.	Cincinnati and Oxford, Ohio.	128
171	18	ORTHIS SUBJUGATA.	Cincinnati and Oxford, Ohio.	129
172	1	DELTHYRIS LYNX. Several specimens from Trenton falls, and from Cincinnati and Oxford (Ohio), and Maysville (Kentucky).	Trenton falls.	133
173	6	ATRYPA EXTANS.	Watertown, Jefferson.	137
175	8	ATRYPA CUSPIDATA.	Lowville.	138
176	9	ATRYPA BISULCATA.	Adams, Jefferson.	139
178	11	ATRYPA RECURVIROSTRA.	Martinsburgh, Jefferson.	140
180	13	ATRYPA MODESTA. Several specimens.	Cincinnati and Oxford, Ohio.	141
183	16	ATRYPA HEMIPLICATA. Several specimens.	Middleville, Herkimer.	144
186	19	ATRYPA INCREBESCENS. Several specimens: the usual form, Middleville; the larger forms from Cincinnati, Oxford, &c. Ohio.	Middleville.	146

ACEPHALA.

189	1	Nucula levata. Two specimens from Middleville, Herkimer; others from Lowville, Lewis.	Middleville and Lowville.	p. 150
191	1	Tellinomya nasuta.	Middleville.	152
197	1	Edmondia ventricosa.	Lowville.	155
198	2	Edmondia subtruncata.	Watertown.	156
202	3	Modiolopsis faba.	Middleville & Watertown.	158
204	5	Modiolopsis arcuatus.	Herkimer.	159
210	1	Avicula trentonensis.	Middleville.	161
212	1	Ambonychia bellistriata. A plaster cast.	Trenton falls.	163
213	2	Ambonychia orbicularis.	Watertown.	164
214	3	Ambonychia amygdalina. A plaster cast.	Adams.	165
215	4	Ambonychia undata.	Watertown.	165

GASTEROPODA.

218	1	Holopea symmetrica.	Middleville.	170
219	2	Holopea obliqua.	Watertown.	170
220	3	Holopea paludiniformis.	Watertown.	171
221	4	Holopea ventricosa. A plaster cast.	Middleville.	171
223	11	Pleurotomaria lenticularis.	Watertown.	172
225	13	Pleurotomaria subconica. A plaster cast.	Watertown.	174
74	7	Pleurotomaria umbilicata. Several specimens.	Lowville and Adams.	175
226	14	Pleurotomaria indenta. One specimen.	Watertown.	176
227	15	Pleurotomaria ambigua. A plaster cast.	Adams.	176
228	16	Pleurotomaria percarinata. Plaster cast.		177

				Palæontology—Vol. I.
229	6	Murchisonia bicincta.	Lowville and Watertown.	p. 177
231	8	Murchisonia perangulata. A plaster cast.	Middleville.	179
233	10	Murchisonia bellicincta. Specimens from Middleville, Turin and Adams. Cast of a large specimen, the original in the Collection of the Albany Institute. Other large specimens in the State Collection, recently obtained.	Middleville, Turin, &c.	179
234	11	Murchisonia subfusiformis. Cast of a large specimen.	Lowville.	180
235	12	Murchisonia vittata. A cast, and other specimens.	Adams.	181
236	13	Murchisonia gracilis. One specimen.	Middleville.	181
277	1	Subulites elongata. Several specimens.	Watertown.	182
139	2	Carinaropsis patelliformis.	Middleville.	183
240	1	Bellerophon bilobatus. Several specimens.	Trenton falls & Middleville.	184
241	2	Bellerophon bilobatus, *var.* acutus.		185
242	3	Bellerophon bilobatus, *var.* corrugatus. A plaster cast.	Trenton falls.	185
243	3	Bucania expansa. A plaster cast.	Watertown.	186
244	4	Bucania bidorsata.	Watertown.	186
245	5	Bucania punctifrons.	Middleville.	187
246	1	Cyrtolites compressus.	Middleville.	188
247	2	Cyrtolites trentonensis.	Mohawk valley.	189
248	3	Cyrtolites filosum. A plaster cast.	Watertown.	190

CEPHALOPODA.

249	1	Trocholites ammonius. Two specimens.	Middleville.	192
251	2	Cyrtoceras annulatum.	Middleville.	194
252	3	Cyrtoceras macrostomum. A plaster cast.	Wisconsin.	195

				Palæontology—Vol. I.
254	5	Cyrtoceras multicameratum.	Middleville.	p. 195
257	1	Oncoceras constrictum.	Watertown.	197
258	11	Orthoceras arcuoliratum.	Watertown.	198
259	12	Orthoceras teretiforme.	Watertown.	198
261	14	Orthoceras bilineatum.	Middleville.	200
269	22	Orthoceras junceum.	Watertown.	204
270	23	Orthoceras amplicameratum.	Middleville.	205
		Endoceras proteiforme. Several specimens, of the following varieties:	Middleville.	208
274	6	Endoceras proteiforme, *var.* tenuistriatum.		209
275	7	Endoceras proteiforme, *var.* tenuitextum.		210
276	8	Endoceras proteiforme, *var.* lineolatum.		211
277	9	Endoceras proteiforme, *var.* strangulatum.		212
278	10	Endoceras proteiforme, *var.* elongatum.		216
286	1	Cameroceras trentonense.	Middleville.	221
287	4	Conularia trentonensis.	Middleville.	222

CRUSTACEA OF THE BIRDSEYE & TRENTON LIMESTONES, HUDSON-RIVER GROUP, AND UTICA SLATE.

292	3	Asaphus extans. Some fragments.	Lowville.	228
293	1	Calymene multicosta.	Isle Lamotte.	228
42	2	Illænus crassicauda. A plaster cast.	Carlisle, Pennsylvania.	229
294	3	Illænus trentonensis. A plaster cast.	Hogansburgh.	230
43	1	Isotelus gigas. Several imperfect specimens.	Middleville.	231
297	2	Calymene beckii.	Middleville.	237
298	3	Calymene senaria. Several specimens.	Middleville.	238
301	2	Ceraurus pleurexanthemus. Fragments of cephalic shields.		242

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302	3	Ceraurus vigilans.	Middleville.	p. 245
305	1	Phacops callicephalus.	Middleville.	247
306	4	Asaphus nodostriatus.	Watertown.	248
307	1	Trinucleus concentricus.	Sugar river, &c.	249
297	2	Calymene beckii.	Turin, &c.	250
		Several specimens from Turin and Oxtungo creek.		
307	1	Trinucleus concentricus.	Loraine, Jefferson.	255
311	2	Olenus undulostriatus.	Snake hill, Saratoga.	258
112	1	Agnostus lobatus.	Troy.	258

6. HUDSON-RIVER GROUP.

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316	4	Buthotrephis subnodosa.	Turin, Lewis.	262
317	5	Buthotrephis? flexuosa.	Jackson, Washington.	263
318	5	Palæophycus virgatus.	Union village, Washington.	263
319	6	Palæophycus ——?	Rome, Oneida.	264
320	1	Gordia marina.	Jackson, Washington.	264

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321	2	Graptolithus pristis.	Turin, Loraine, &c.	265
322	3	Graptolithus secalinus.	Hoosick slate quarries.	267
324	5	Graptolithus bicornis.	Albany.	269
325	6	Graptolithus ramosus.	Albany.	270
326	7	Graptolithus scalaris.	West-Canada creek & Albany.	271
327	8	Graptolithus sagittarius.	Albany.	272
328	9	Graptolithus tenuis.	Albany.	262
329	10	Graptolithus sextans.	Albany.	273
332	13	Graptolithus gracilis.	Albany.	274
334	1	Favistella stellata.	Madison, Indiana.	275
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337	1	HETEROCRINUS HETERODACTYLUS.	Near Rome, Oneida.	p. 279
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141	4	LEPTÆNA ALTERNATA.	Pulaski, Oswego.	286
146	9	LEPTÆNA SERICEA.	Turin, Lewis.	287
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341	19	ORTHIS? ERRATICA. Several specimens from boulders.		288
342	20	ORTHIS CENTRILINEATA.	Loraine, Jefferson.	289
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343	5	ORBICULA? SUBTRUNCATA.	Loraine, Jefferson.	290

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353	13	MODIOLOPSIS CURTA.	Loraine, Jefferson.	297
355	15	MODIOLOPSIS ANODONTOIDES.	Pulaski, Oswego.	298
202	3	MODIOLOPSIS FABA.	Pulaski.	298
358	2	ORTHONOTA PARALLELA.	Pulaski.	299
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190	2	NUCULA? POSTSTRIATA.	Loraine and Pulaski.	301

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236	13	Murchisonia gracilis.	Loraine, Jefferson.	p. 303
363	14	Murchisonia uniangulata, *var.* abbreviata.	Near Rome.	304
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239	2	Carinaropsis patelliformis.	Pulaski, Oswego.	306
367	3	Carinaropsis orbiculatus.	Waterford.	306
240	1	Bellerophon bilobatus.	Turin, Loraine, &c.	307
368	4	Bellerophon cancellatus.	Loraine.	307
369	4	Cyrtolites ornatus.	Turin, Pulaski, &c.	308

CEPHALOPODA.

249	1	Trocholites ammonius.	Canajoharie.	309
370	2	Trocholites planorbiformis.	Pulaski.	310
371	18	Endoceras proteiforme?	Oxtungo creek, Turin.	311
373	26	Orthoceras coralliferum.	Turin and Pulaski.	312
374	28	Orthoceras lamellosum.		312
375	2	Ormoceras crebriseptum.	Turin.	313

SECOND ANNUAL REPORT

OF THE

REGENTS OF THE UNIVERSITY,

ON THE

Condition of the State Cabinet

OF

NATURAL HISTORY.

WITH

CATALOGUES OF THE SAME.

Made to the Senate January 12, 1849.

ALBANY:
WEED, PARSONS & CO., PUBLIC PRINTERS.
1849.

REGENTS OF THE UNIVERSITY.

The following composed the Board of Regents of the University at the time of making this report :

The Governor, ex officio.
The Lieut. Governor, ex officio.
The Secretary of State, ex officio.
Peter Wendell, M. D., Chancellor.
John Greig, Vice-Chancellor.
Gulian C. Verplanck, L. L. D.
Gerrit Y. Lansing.
John K. Paige.
Erastus Corning.
Prosper M. Wetmore.
John L. Graham.
John McLean.
Gideon Hawley, L. L. D.
David Buel.
James S. Wadsworth.
John V. L. Pruyn.
Jabez D. Hammond.
John L. O'Sullivan.
Robert Campbell.
Rev. Samuel Luckey, D. D.
Robert G. Rankin.
(one vacancy.)
T. Romeyn Beck, Secretary.

J. W. Taylor,
Curator of the "State Cabinet of Natural History."

MEMORANDUM.

The safe keeping of the "State Cabinet of Natural History" was committed to the Regents of the University by an act of the Legislature, passed May 10, 1845. On the 3d of May, 1847, an appropriation of one hundred and fifty dollars was granted, "for preserving and adding to, the collections in the same," and on the 11th of April, 1848, a further appropriation was made, making the total sum of five hundred dollars for each of the years 1847 and 1848.

Standing Committees of the Regents specially charged with the care of the State Cabinet.

1846.

The Chancellor,
Mr. Lansing,
Mr. Paige.

1847.

The Chancellor,
Mr. Lansing,
Mr. Paige,
Mr. Corning,
Mr. Wadsworth.

1848.

The Governor,
The Secretary of State.
Mr. Lansing,
Mr. Corning,
Mr. Wadsworth.

REPORT.

TO THE LEGISLATURE OF THE STATE OF NEW-YORK.

The Regents of the University, to whom was committed the care of the " *State Cabinet of Natural History*,"

Respectfully Report :

That they have availed themselves of the liberality of the Legislature of 1848, in increasing and improving the collections of Natural History. To the class of Quadrupeds, fifteen preserved specimens have been added, including amongst others, the Otter, the Opossum, the Bay Lynx, and the Red and Grey Fox ; and to that of Birds, fifty-five have been added, either by purchase or donation. Of these last, the Brown or Bald Eagle, and the Wild Turkey are particularly worthy of notice. The whole number of birds credited to this state, by Dr. De Kay, amounts to 308. Of these, we have now upwards of 250, and a considerable number in addition is shortly expected. Some of the specimens are, however, imperfect or injured, from various causes, and will need a gradual replacement with more characteristic ones.

A small, but interesting collection of the Fauna of Lake George, including Reptiles, Amphibians, and Fishes, have been added by donation, and the Regents trust that this example will not be lost on our fellow citizens residing in the vicinity of the numerous lakes within the State, and on its borders. Doubtless many, on receiving the suggestion, will cheerfully aid in obtaining the fishes and other animals peculiar to each. They can be preserved, even during the summer months, at a trifling expense, and transported to this city without injury. It would certainly be highly interesting, could an accumulation of these geographical Faunas be concentrated in one place. The variety and diversity of our fishes could then be studied to the greatest advantage; and whilst some facts would doubtless be elicited of value in a commercial point of view, there is little question but that some higher problems in science, now in doubt, may be satisfactorily solved.

Until within a few months, the Cabinet has contained no insects native to the State. Apprised of the ardor and success with which Dr. Fitch of Washington countv had pursued the study of Entomology for several years, the Regents requested his aid in commencing such a collection, and they are happy to state that he readily assented to their wishes. About 600 have been arranged and catalogued in three cases, and if sustained in his pursuits, there can be no question but that he will in a few years, increase these to a much larger number, whilst at the same time, the best facilities will thus be afforded for studying such as are noxious to vegetation or destructive to our fruits.

Dr. Torrey has furnished a catalogue of the plants in the State Herbarium for publication, and is now engaged in labelling each species. This collection of our native plants will thus become one of standard reference, as it will carry with it the authority of the most eminent botanist in the United States.

The additions to the minerals and geological specimens will be found among the documents accompanying this report, with the names (if presented,) of the donors.

A single subject remains to be noticed, and it is one which the Regents trust will meet with a ready approval from the Legislature.

In 1847, on the suggestion of the Governor, who had visited the interesting Historical and Antiquarian Museum at Hartford, Connecticut, it was resolved that an attempt should be made to establish a similar one in connexion with the State Cabinet. A circular was addressed to our fellow citizens, asking their aid, in furnishing the relics of the ancient masters of the soil, and the monuments and remembrances of our colonial and revolutionary history. The appeal has not been unnoticed. A catalogue is now presented of the first fruits of the project. For a valuable and important portion of the collection, the State is indebted to the liberality of Lewis H. Morgan, Esq., of Rochester, who has freely and readily made a donation of the results of his researches in Western New-York, for several years. His communications accompanying, possess great interest, and they are accordingly transmitted for publication.

Mr. Morgan also informed the Regents that an equally, if not more valuable collection had been made by William H. C. Hosmer, Esq., of Avon, Livingston county, which could be obtained by purchase. As the amount required was small, they have made the acquisition, and the articles stated are now in the cabinet.

The following documents accompany this report:

1. A catalogue of the Quadrupeds, Birds, and other animals, added from the date of the last report to the 1st of January, 1849.
2. A catalogue of the Insects obtained from Dr. Fitch.
3. A catalogue of the Plants contained in the State Herbarium, prepared by Dr. Torrey.
4. A list of the Minerals, Geological specimens, and Fossils added to the collection during 1847 and 1848, with a memorandum of Professor Hall, concerning the additions made by him to the Palæontological collection, since the date of the last report.
5. A catalogue of the Historical and Antiquarian collection.

The donations are duly acknowledged under each. A statement of the drafts made on the Treasurer is also annexed, marked A.

The Regents cannot conclude this report without expressing the wish, that the Legislature will continue their present annual appropriation. With every accession, new erections for safe-keeping are required, and thus the honest labor of various descriptions of mechanics is encouraged and rewarded. But beyond this, there is much to be gained in fostering and enlarging these exhibitions of the native productions of our state. A view of them improves the taste and increases knowledge. Every government in Europe has adorned its capital with museums of Nature and Art, doubtless in some instances, to quench or restrain the spirit of inquiry on subjects more interesting to them. With us, they can have no such effect. The mementoes of the past, the imperfect exhibitions of the present, will only incite to new and more active efforts for a surpassing future.

By order of the Regents of the University.

PETER WENDELL,
Chancellor.

T. ROMEYN BECK, *Secretary.*

(A.)

The Regents of the University in account current with the appropriations made for 1847 *and* 1848, *towards preserving and increasing the collections in the* "State Cabinet of Natural History," *and for defraying the incidental expenses of the same.*

Dr.

By amount of said appropriation, being $500 for each year, 1847 and 1848,	$1,000 00

Cr.

		By amount reported as expended, in the annual report dated April 11, 1848, (see Senate Document No. 72,)	$144 38
1848.			
May	13.	By cash paid John C. Locke, cases for birds, and for the Herbarium, and painting and glazing the same,	33 27
July	1.	By cash paid John G. Bell, for preserved specimens of birds, and other animals,	208 25
"	"	By cash paid for contingent expenses incurred since Nov. 1, 1847, including 14 small accounts,	24 76
Sept.	27.	By cash paid John Stuart for cases for birds, and for painting and glazing the same,	32 52
"	"	By cash paid for furniture and a blank book,	15 00
Dec.	9.	By cash paid Boardman and Van Vorst, for building a large case in the West Room, to contain minerals, &c., and painting and glazing the same,	142 27
"	"	By cash paid John G. Bell, for preserved birds and other animals,	58 25
		Amount carried forward,	$658 70

		Amount brought forward,	$658 70
1848.			
Dec.	9.	By cash paid Dr. Asa Fitch, for a collection of native insects, (605 in number,) and arranging and naming the same,	80 00
"	"	By cash paid for contingent expenses, since July 1, 1848, consisting of 14 separate accounts, and including payment for 500 trays for fossils, and for 26 casts of fossils,	43 93
Dec.	26.	By cash paid W. H. C. Hosmer, of Avon, for his collection of Indian remains and relics,	50 00
"	29.	By cash paid for a quantity of glass jars, alcohol, and India rubber for present and future collections, and also for freight, and contingent expenses,	78 44
			$911 07

CATALOGUE

OF THE

QUADRUPEDS, BIRDS, REPTILES, FISHES, &c.

ADDED TO THE

State Cabinet of Natural History,

FROM APRIL 11, 1848, TO JANUARY 1, 1849.

MAMMALIA.

ORDER MARSUPIATA.

FAMILY DIDELPHIDÆ.

Zoology—Part I.
Didelphis virginiana, *American Opossum.* - - - - p. 3

ORDER CARNIVORA.

FAMILY SORECIDÆ.

Condylura cristata, *Star-nose Mole.* - - - - - - 12
Sorex dekayi, *De Kay's Shrew.* - - - - - - 17

FAMILY MUSTELIDÆ.

Putorius noveboracensis, *New-York Ermine* or *Weasel.* - - 36

FAMILY LUTRIDÆ.

Lutra canadensis, *North American Otter.* - - - - 39

FAMILY CANIDÆ.

Vulpes fulvus, *Red Fox.* - - - - - - - - 44
Vulpes virginianus, *Grey Fox.* - - - - - - - - 45

FAMILY FELIDÆ.

Lyncus rufus, *Wildcat*, or *Bay Lynx.* - - - - 51

ORDER RODENTIA.

FAMILY SCIURIDÆ.

		Zoology—Part I.
Sciurus leucotis (migratorius),	*Gray Squirrel.*	p. 57
Sciurus niger,	*Black Squirrel.*	60
Sciurus striatus,	*Striped Squirrel.*	62
Pteromys volucella,	*Flying Squirrel.*	65

FAMILY CASTORIDÆ.

Fiber zibethicus,	*Muskrat* or *Musquash.*	75

FAMILY LEPORIDÆ.

Lepus nanus (sylvaticus),	*American Gray Rabbit.*	93
Lepus americanus,	*Northern Hare.*	95

BIRDS.

ORDER ACCIPITRES.

FAMILY FALCONIDÆ.

		ZOOLOGY—Part II.
HALIÆTOS LEUCOCEPHALUS,	*Brown* or *Bald Eagle* (male). - -	p. 5

The specimen reported last year is a young animal; the present, a full grown male.

ASTUR ATROCAPILLUS,	*American Goshawk* (male). - - -	19
CIRCUS ULIGINOSUS,	*Marsh Harrier* (female). - - -	20

FAMILY STRIGIDÆ.

SURNIA FUNEREA,	*Hawk Owl* (male). - - - - -	21

ORDER PASSERES.

FAMILY CAPRIMULGIDÆ.

CAPRIMULGUS VOCIFERUS,	*Whippoorwill.* - - - - - - - -	32
*CHORDEILES AMERICANUS,	*American Nighthawk* (male). - -	34

FAMILY HIRUNDINIDÆ.

HIRUNDO PURPUREA,	*Purple Martin* (male). - - - -	37
*HIRUNDO RUFA,	*Barn Swallow* (male). - - - -	40

FAMILY AMPELIDÆ.

*BOMBYCILLA CAROLINENSIS†,	*Cedar-bird* (male). - - - - -	44

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* To replace imperfect specimens reported last year.

† Presented by T. C. HENRY, of Philadelphia.

FAMILY CERTHIDÆ.

		Zoology—Part II.
Troglodytes brevirostris,	*Short-billed Wren.*	p. 58

FAMILY PARIDÆ.

Parus carolinensis,	*Carolina Tit* (male).	61

FAMILY SIALIDÆ.

*Sialia wilsoni,	***Bluebird*** (male).	65

FAMILY SYLVICOLIDÆ.

Vermivora pennsylvanica,	*Worm-eating Warbler* (male).	82
Sylvicola striata,	*Black-poll Warbler* (male).	95
Sylvicola discolor,	*Prairie Warbler* (male).	96
Sylvicola æstiva,	*Summer Yellow-bird* (male).	99
Wilsonia pusilla,	*Green Black-capped Warbler* (fem.).	108

FAMILY MUSCICAPIDÆ.

*Muscicapa ruticilla,	*American Redstart* (male).	111

FAMILY LANIIDÆ.

Lanius septentrionalis†,	*Northern Butcher-bird* (female).	127

FAMILY CORVIDÆ.

Corvus ossifragus,	*Fish Crow.*	135

FAMILY FRINGILLIDÆ.

Coccoborus ceruleus,	*Blue Grosbeak* (female).	145
*Coccoborus ludovicianus†,	*Rose-breasted Grosbeak* (male).	146
*Pipilo erythrophthalmus,	*Chewink*, or *Ground Robin* (male).	172
Pyranga æstiva,	*Summer Redbird* (male).	176
Plectrophanes lapponicus,	*Lapland Snowbird* (adult male).	177

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* To replace imperfect specimens.

† Presented by T. C. Henry, of Philadelphia.

ORDER GALLINÆ.

FAMILY PHASIANIDÆ.

		Zoology—Part II.
Meleagris gallopavo,	*Wild Turkey.*	p. 199

FAMILY TETRAONIDÆ.

Ortyx virginiana,	*American Quail.*	202

Five specimens, to accompany Fox.

ORDER GRALLÆ.

FAMILY GRUIDÆ.

Ardea herodias†,	*Great Blue Heron* (male).	219
Ardea candidissima,	*White-crested Heron* (male).	221
Ardea ludoviciana,	*Louisiana Heron* (male).	223
*Ardea discors,	*Black-crowned Night Heron* (male).	227
*Ardea violacea,	*Yellow-crowned Night Heron* (male).	228

FAMILY TANTALIDÆ.

Ibis mexicanus,	*Glossy Ibis* (female).	231

FAMILY SCOLOPACIDÆ.

*Hemipalma himantopus,	*Long-legged Sandpiper.*	235
*Tringa rufescens,	*Buff-breasted Sandpiper* (male).	238
*Totanus bartramius,	*Grey Plover.*	247
*Limosa fedoa,	*Marlin.*	252
Limosa hudsonica,	*Ring-tailed Marlin,* or *Godwit*	253
*Ortygometra noveboracensis,	*New-York Rail.*	263
Gallinula galeata‡,	*Florida Gallinule* (male & female).	264

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* To replace old specimens.

† Presented by James Redfield, of Wayne county.

‡ One of these was entered by mistake in the last catalogue, both having been purchased this year.

ORDER NATATORES.

FAMILY ALCIDÆ.

		Zoology—Part II.
Mergulus alle,	*Sea Dove.*	p. 280

FAMILY COLYMBIDÆ.

Colymbus glacialis,	*Great Loon* or *Diver* (female).	285
Colymbus septentrionalis,	*Red-throated Loon* (male).	286

FAMILY PROCELLARIDÆ.

Thalassidroma leachi,	*Fork-tailed Petrel.*	291

FAMILY LARIDÆ.

Sterna cayana,	*Cayenne Tern.*	299

FAMILY ANATIDÆ.

Mergus merganser,	*Buff-breasted Sheldrake* (male).	318
Mergus cucullatus†,	*Hooded Sheldrake* (male).	320
Fuligula valisneria,	*Canvassback* (female).	321
Fuligula minor,	*Creek Broadbill* (male).	324
Fuligula histrionica,	*Harlequin Duck.*	331
Anas carolinensis,	*Green-winged Teal* (female).	340
Anas strepera,	*Grey Duck*, or *Gadwall* (male).	343
Anas obscura,	*Black Duck* (male).	344
Anas boschas,	*Mallard* (female).	347
Anser bernicla,	*Brant Goose.*	351

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* To replace old specimens.

† Presented by Hon. Thomas Barlow, of Madison county.

FROM LAKE GEORGE.

REPTILES.

1. Crotalus durissus (*Northern Rattlesnake*). Three feet nine inches long, with six rattles. Killed on the southern shore.
2. Rattles of the Rattlesnake (purchased).

AMPHIBIANS.

1. Bullfrog.
2. Frog.
3. Frog.
4. Toad.

FISHES.

1. Silver Eel.
2. Rock Bass.
3. Perch.
4. Cat-fish (Bullhead).
5. Sun-fish.
6. Fall Trout.
7. Silver Trout.
8. Trout.
9. Trout.
10. White-fish.
11. Lake Bass (Oswego Bass).
12. Shiner.
13. —— (name unknown).
14. —— do.
15. —— do.
16. Brook Trout, from a stream emptying into Lake George.

The above were collected during the summer of 1848, by the Rev. Dr. John N. Campbell; Benjamin Davids, esquire, & Sons, of Philadelphia, and T. Romeyn Beck.

The names are such as are commonly given. Their scientific arrangement is left to persons more conversant with Ichthyology.

CATALOGUE

OF

THE INSECTS

IN THE

State Cabinet of Natural History,

DECEMBER 1, 1848.

By Asa Fitch, M. D.

THE following is a list of such New-York Insects as are now deposited in the State Cabinet of Natural History. These are intended merely as the beginning of a collection in this branch. Other engagements the past season have allowed me but a few days to devote to this work. I have consequently only attempted to select from a collection of New-York specimens, such of our described species as my previous attention to this science enabled me most readily to identify.

These specimens are for the present comprised in three cases, and are arranged in columns, and numbered in the same order as in the following catalogue. The specimens are also furnished with printed labels, the specific name being placed *under* each species, and the generic name *at the head* of each genus. To indicate the head of each genus and family more conspicuously, the generic names are on yellow and the family names on green tinted paper.

The names of the authors by whom the respective genera and species were first named and described, are abbreviated in the catalogue and on the labels, as follows: A. Smith and Abbot, Bd. Boisduval, Bn. Bonelli, Bv. Palisot de Beauvois, C. Cramer, Cl. Clairville, Ct. Curtis, Dg. Degeer, Dj. Dejean, Dl. Dalman, Dm. Dumeril, Dr. Drury, Er. Erichson, Ez. Eschscholtz, F. Fabricius, Fh. Fitch, Fr. Forster, Gf. Geoffroy, Gl. Gyllenhal, Gr. Germar, Gv. Gravenhorst, H. Harris, Hb. Herbst, Hf. Hoffman, Hl. Haldeman, Hz. Hentz, I. Illiger, K. Kirby, Kn. Knoch, L. Linnæus, Lc. Leconte, Lh. Leach, Lt. Latreille, M. Melsheimer, Mc. McLeay, Mg. Megerle, N. Newman, O. Olivier, Oc. Ochsenheimer, Pk. Peck, Py. Paykull, Pz. Panzer, R. Randall, S. Say, Sk. Schrank, Sl. Solier, Sr. Schönherr, St. Stephens, Sv. Serville, Wb. Weber, Z. Ziegler.

INSECTS.

CASE No. 1.

CICINDELIDÆ.

CICINDELA, L.

SPECIMEN.
1, 2. VULGARIS, S.
3, 4. REPANDA, Dj.
5, 6. HIRTICOLLIS, S.
7, 8. PUNCTULATA, O.
9. 10. PURPUREA, O.
11. PATRUELA, Dj.
12, 13. SEX-GUTTATA, F.

CARABIDÆ.

CASNONIA, Lt.

14. PENNSYLVANICA, L.

GALERITA, F.

15, 16. AMERICANA, L.

BRACHINUS, Wb.

17, 18. FUMANS, F.
19. PERPLEXUS, Dj.
20. CEPHALOTES, Dj.
21, 22. CONFORMIS, Dj.

LEBIA, Lt.

23, 24. ATRIVENTRIS, S.
25, 26. SMARAGDULA, Dj.
27, 28. VIRIDIS, S.

CYMINDIS, Lt.

SPECIMEN.
29, 30. PILOSA, S.

SCARITES, F.

31. SUBTERRANEUS, F.

DYSCHIRIUS, Pz.

32. GLOBULOSUS, S.

CLIVINA, Lt.

33, 34. LINEOLATA, S.

CALATHUS, Bn.

35, 36. GREGARIUS, S.

ANCHOMENUS, Bn.

37, 38. EXTENSICOLLIS, S.

AGONUM, Bn.

39. OCTOPUNCTATUM, F.
40, 41. CUPRIPENNE, S.

PŒCILLUS, Bn.

42, 43. CHALCITES, S.
44, 45. LUCUBLANDUS, S.

ADELOSIA, St.

46, 47. MUTA, S.

Specimen.

FERONIA, Lt.

48, 49. stygica, S.
50, 51. adoxa, S.

AMARA, Bn.

52, 53. impuncticollis, S.

AGONODERUS, Dj.

54, 55. pallipes, F.

PANGUS, Z.

56, 57. caliginosus, F.

ANISODACTYLUS, Dj.

58, 59. agricolus, S.
60, 61. rusticus, S.
62, 63. baltamoriensis, S.

HARPALUS, Lt.

64, 65. erraticus, S.
66, 67. faunus, S.
68, 69. bicolor, F.
70, 71. pleuriticus, K.

TRECHUS, Cl.

72, 73. conjunctus, S.
74, 75. cinctus, S.

CHLŒNIUS, Bn.

76, 77. sericeus, Fr.
78. 79. lithophilus, S.
80, 81. nemoralis, S.
84, 85. emarginatus, S.
86, 87. tomentosus, S.

DICŒLUS, Bn.

88, 89. dilatatus, S.
90, 91. elongatus, Bn.

SPHÆRODERUS, Dj.

92, 93. stenostomus, Wb.

CYCHRUS, F.

94. viduus, Dj.

Specimen.

CARABUS, L.

95. vinctus, Wb.
96, 97. limbatus, S.
98, 99. serratus, S.

CALOSOMA, Wb.

100. scrutator, F.
101, 102. calidum, F.

OMOPHRON, Lt.

103, 104. labiatum, F.
105, 106. " *var.* sayii, K.

ELAPHRUS, F.

107, 108. ruscarius, S.

NOTIOPHILUS, Dm.

109, 110. porrectus, S.

BEMBIDIUM, I.

111. sigillare, S.
112, 113. honestum, S.
114, 115. inequale, S.
116, 117. variegatum, S.
118. oppositum, S.
119, 120. inornatum, S.
121, 122. tripunctatum, S.
123, 124. flavicaudum, S.
125. ephippiatum, S.

DYTICIDÆ.

HALIPLUS, Cl.

126. 12-punctatus, S.
127, 128. immaculaticollis, H. (cat.)

LACCOPHILUS, Lh.

129, 130. maculosus, S.

HYDROPORUS, Cl.

131, 132. niger, S.
133, 134. interruptus, S.
135, 136. affinis, S.

Specimen.

COLYMBETES, Cl.

137. glyphicus, S.
138, 139. fenestralis, S.

ACILIUS, Lh.

140, 141. mediatus, S.

DYTICUS, Gf.

142. harrisii ? K.
143. verticalis, S.
144. fasciventris, S.

GYRINIDÆ.

CYCLOUS, Ez.

145, 146. emarginatus, S.
147, 148. labratus, M.
149, 150. americanus, L.

GYRINUS, Gf.

151. limbatus, S.
152, 153. analis, S.
154, 155. minutus, K.

STAPHYLINIDÆ.

STAPHYLINUS, L.

156, 157. villosus, Gv.
158, 159. cyanipennis, F.

PŒDERUS, F.

160, 161. discopunctatus, S.

BUPRESTIDÆ.

CHRYSOBOTHRIS, Ez.

162. dentipes, Gr.
163, 164. femorata, F.
165. rugosiceps, M.

CHALCOPHORA, Ez.

166, 167. virginiensis, Dr.

Specimen.

DICERCA, Ez.

168, 169. divaricata, S.

BUPRESTIS, L.

170, 171. fasciata, O.
172. " " var. A.

ELATERIDÆ.

ALAUS, Ez.

173, 174. oculatus, L.

MELANOTUS, Ez.

175. glandicolor, M.
176, 177. cinereus, Wb.
178, 179. communis, Sr.
180, 181. similis, K.

LUDIUS, Lt.

182, 183. appressifrons, S.

AGRIOTES, Ez.

184, 185. obesus, S.

CEBRIONIDÆ.

SCYRTES, Lt.

186, 187. solstitialis, M.

LAMPYRIDÆ.

DICTYOPTERA, Lt.

188, 189. reticulata, S.
190, 191. terminalis, S.

OMALISUS, Gf.

192. coccinatus, S.

LAMPYRIS, L.

193, 194. versicolor, F.
195, 196. angulata, S.
197, 198. scintillans, S.

Specimen.

199, 200. corrusca, L.
201, 202. laticornis, O.
203, 204. nigricans, S.

CLERIDÆ.

THANASIMUS, Lt.

205, 206. dubius, F.
207, 208. ? coccineus, S.

NECROBIA, Lt.

209, 210. errans, M.

PTINIDÆ.

PTINUS, L.

211. fur, L.

ANOBIUM, F.

212. paniceum, F.
213. carinatum, S.

LYMEXYLONIDÆ.

CUPES, F.

214, 215. capitata, F.

HISTERIDÆ.

PLATYSOMA, Lh.

216. carolinum, Py.
217, 218. depressum, Py.

HISTER, L.

219, 220. depurator, S.
221, 222. abbreviatus, S.
223. bifidus, S.
224, 225. fœdatus, Lc.
226, 227. americanus, Py.
228, 229. sedecemstriatus, S.
230. subrotundus, Kn.

Specimen.

SAPRINUS, Er.

231. pennsylvanicus, Py.
232, 233. conformis, Dj.

SILPHIDÆ.

NECROPHORUS, F.

234, 235. americanus, O.
236, 237. tomentosus, Wb.

NECRODES, Wilkin.

238, 239. surinamensis, F.

SILPHA, L.

240, 241. americana, L.
242, 243. noveboracensis, Fr.
244, 245. inæqualis, O.
246, 247. caudata, S.

NITIDULIDÆ.

NITIDULA, F.

248, 249. bipustulata, L.

IPS, F.

250, 251. fasciata, O.
252, 353. quadrisignata, S.
254, 255. bipustulatus, M.
256, 257. sanguinolenta, O.

ENGIDÆ.

ENGIS, F.

258. fasciata, F.

DERMESTIDÆ.

DERMESTES, L.

259, 260. lardarius, L.

SPECIMEN.

PARNIDÆ.

ELMIS, Lt.

261, 262. CRENATUS, S.

PARNUS, F.

263, 264. FASTIGIATUS, S.

HYDROPHILIDÆ.

ELOPHORUS, F.

265, 266. LINEATUS, S.

HYDROPHILUS, Gf.

267, 268. OBTUSATUS, S.
269, 270. NATATOR, S.

PHILHYDRUS, Sl.

271. GLOBOSUS, S.
272, 273. CINCTUS, S.
274, bis. FIMBRIATUS, M.

LACCOBIUS, Er.

275, 276. PUNCTATUS, M.

HYDROBIUS, Lh.

277, 278. MELANOCEPHALUS, O.

SPHÆRIDIIDÆ.

CERCYDION, Lh.

279, 280. OCULATUM, S.
281, 282. APICALE, S.

SCARABÆIDÆ.

GEOTRUPES, Lt.

283. MIAROPHAGUS, S.
284, 285. SPLENDIDUS, F.

COPROBIUS, Lt.

286, 287. LÆVIS, Dr.

SPECIMEN.

ONTHOPHAGUS, Lt.

288, 289. HECATE, Pz.
290, 291. OVATUS, L.

PHANÆUS, Mc.

292, 293. CARNIFEX, L.

APHODIUS, I.

294. BICOLOR, S.
295, 296. STRIGATUS, S.
297, 298. TERMINALIS, S.
299. COPRONYMUS, M.
300, 301. FEMORALIS, S.
302, 303. ATERRIMUS, M.
304. SERVAL, S.
305. RUSICOLA, M.

TROX, F.

306, 307. PORCATUS, S.
308, 309. CAPILLARIS, S.

AREODA, Mc.

310. LANIGERA, L.

PELIDNOTA, Mc.

311, 312. PUNCTATA, L.

RHISOTROGUS, Lt.

313, 314. QUERCINA, Kn.
315. DRAKII, K.
316, 317. FRATERNUS, H.
318. GEORGICANA, Gl.
319, 320. PILOSICOLLIS, Kn.

SERICA, Mc.

321. VESPERTINA, Gl.
322, 323. SERICEA, I.

DICHELONYCHA, K.

324, 325. ELONGATA, F.
326, 327. TESTACEA, K.
328. VIRESCENS, K.

MACRODACTYLA, Lt.

330, 331. SUBSPINOSA, F.

SPECIMEN.

EUCHLORA, Mc.

332, 333. cœlebs, Gr.
334. " *var.* atrata, F.

HOPLIA, I.

335, 336. trifasciata, S.

TRICHINUS, K.

337. viridans, K.

GYMNODUS, K.

338, 339. eremicola, Kn.
340, 341. scaber, Bv.

CREMASTOCHEILUS, Kn.

342, 343. hentzii, H.

CETONIA, F.

344, 345. inda, L.
346, 347. fulgida, F.

LUCANIDÆ.

LUCANUS, L.

348, 349. dama, F. (male).
350, 351. " (female).

PLATYCERUS, Lt.

352, 353. piceus, Wb.
354, 355. securidens, S.

TENEBRIONIDÆ.

UPIS, F.

356, 357. pennsylvanicus, Dg.

TENEBRIO, L.

358, 359. reflexus, S.
360, 361. obscurus, F.
362, 363. curvipes, F.
364, 365. molitor, L.
366. badius, S.

SPECIMEN.

DIAPERIDÆ.

BOLETOPHAGUS, F.

367, 368. cornutus, F.

HELOPIDÆ.

PYTHO, F.

369, 370. americanus, K.

CISTELIDÆ.

CISTELA, F.

371, 372. brevis, S.
373. sericea, S.

PYROCHROIDÆ.

DENDROIDES, Lt.

374, 375. canadensis, Lt.

PYROCHROA, Gf.

376, 377. flabellata, F.

CANTHARIDÆ.

MELOE, F.

378. angusticollis, S.

CANTHARIS, Gf.

379, 380. cinerea, F.
381, 382. atrata, F.

BRUCHIDÆ.

BRUCHUS, L.

383, 384. pisi, L.

SPECIMEN.

CURCULIONIDÆ.

ATTELABUS, L.

385, 386. PUBESCENS, S.
387, 388. SIMILIS, K.
389. ANALIS, Hb.
390, 391. BIPUSTULATUS, F.

BRENTUS, F.

392. SEPTENTRIONIS, Hb.

PHYLLOBIUS, Sr.

393, 394. TÆNIATUS, S.

PACHYRHYNCHUS, K.

395. SCHÖNHERII, K.

HYLOBIUS, Gr.

396, 397. PALES, Hb.

SPECIMEN.

PISSODES, Gr.

398, 399. STROBI, Pk.

SCOLYTIDÆ.

HYLURGUS, Lt.

400, 401. TEREBRANS, O.

MYCETOPHAGIDÆ.

SILVANUS, Lt.

402, 403. SURINAMENSIS, L.

CUCUJIDÆ.

CUCUJUS, F.

404. CLAVIPES. O.

PARANDRA, Lt.

405, 406. BRUNNEA, F.

CASE No. 2.

CERAMBYCIDÆ.

PRIONUS, Gf.

407. LATICOLLIS, Dr.
408, 409. PENNSYLVANICUS, Dg.

ELAPHIDION, Sv.

410, 411. VILLOSUM, F.

CALLIDIUM, F.

412. AGRESTIS, K.
413. SUBSTRIATUM, Hl.

MERIUM, K.

414. VARIABILE, L.

CLYTUS, F.

415, 416. PICTUS, Dr.
417, 418. HAMATUS, S.
419, 420. PICIPES, F.

MOLORCHUS, F.

421, 422. BIMACULATUS, S.

MESOSA, Sv.

423. STICTICA, Dj.
424. VICINA, Hl.

MONOCHAMUS, Mg.

425. TITILLATOR, F. (male).
426. " (female).
427. SCUTELLATUS, S.
428, 429. PULCHER, Hl.

TETRAOPES, Dl.

430, 431. TETROPHTHALMA, Fr.

SAPERDA, F.

432. VESTITA, S.
433. LATERALIS, F.

Specimen.

DESMOCERUS, Dj.

434, 435. palliatus, Fr.

RHAGIUM, F.

436, 437. lineatum, O.

PACHYTA, Mg.

438, 439. cordifera, O.

STRANGALIA, Sv.

440. subhamata, R.

STENURA, Dj.

441. nitens, Fr.
442, 443. velutina, O.
444. lugubris, S.
445. lineola, S.
446. cincta, Hl.

LEPTURA, L.

447, 448. vittata, O.
449. octonotata, S.

GRAMMOPTERA, Sv.

450. capitata, N.
451. ruficollis, S.

CRIOCERIDÆ.

DONACIA, F.

452. affinis, K.

MACROPLEA, Hf.

453. proxima, K.

ORSODACNA, Lt.

454. vittata, S.

CRIOCERIS, Gf.

455, 456. trilineata, O.

Specimen.

CASSIDIDÆ.

HISPA, L.

457, 458. vittata, F.
459, 460. rosea, Wb.

CASSIDA, L.

461. clavata, F.
462, 463. helianthi, R.

CHRYSOMELIDÆ.

CLYTHRA, F.

464, 465. quadriguttata, S.

EUMOLPUS, F.

466, 467. auratus, F.
468. barbatus, S.

CHRYSOMELA, L.

469, 470. trimaculata, L.
471, 472. scalaris, Lc.
473, 474. decipiens, Wb.
475, 476. philadelphica, Dg.
477, 478. pulchra, F.
479, 480. cæruleipennis, S.

GALERUCA, Gf.

481, 482. vittata, F.

ŒDIONYCHIS, Lt.

483, 484. thoracica, F.
485, 486. vians, S.

ORCHESTRIS, K.

487. triangularis, S.
488, 489. collaris, F.

HALTICA, I.

490. caroliniana, F.

Specimen.

COCCINELLIDÆ.

COCCINELLA, L.

491, 492.	borealis, F.
493, 494.	9-notata, F.
495.	abbreviata, F.
496, 497.	transversoguttata, H. (cat.).
498.	bioculata, S.
499, 500.	immaculata, F.
501, 502.	10-maculata, L.
503.	parenthesis, S.
504, 505.	20-maculata, L.
506.	binotata, S.
507.	normata, S.
508, 509.	ursina, F.
510, 511.	stigma, S.

SCYMNUS, Hb.

512.	terminatus, S.

MANTIDÆ.

SPECTRUM, Stoll.

513, 514.	femoratum, S.

ACHETIDÆ.

ACHETA, F.

515, 516.	abbreviata, H.
517.	nigra, H.
518, 519.	vittata, H.

ŒCANTHUS, Sv.

520, 521.	niveus, Dg.

GRYLLIDÆ.

RAPHIDOPHORA, Sv.

522.	? maculata, H.

Specimen.

PLATYPHYLLUM, Sv.

523.	concavum, H.

PHANEROPTERA, Sv.

524, 525.	angustifolia, H.

ORCHELIMUM, Sv.

526, 527.	vulgare, H.
528, 529.	gracile, H.

ACRYDIUM, Lt.

530.	flavo-vittatum, H.
531, 532.	femur-rubrum, Dg.

LOCUSTA, Lh.

533.	carolina, L.
534.	corallina, H.
535.	sulphurea, F.
536.	viridifasciata, Dg.
537.	curtipennis, H.

TETRIX, Lt.

538.	quadrimaculata, H.
539, 540.	bilineata, H.
541.	sordida, H.
542.	lateralis, S.
543.	parvipennis, H.

PANORPIDÆ.

BOREUS, Lt.

544, 545.	nivoriundus, Fh.
546, 547.	brumalis, Fh.

PANORPA, L.

548, 549.	fasciata, L.

SIALIDÆ.

CORYDALIS, Lt.

550.	cornutus, Lt.

SPECIMEN.

CHAULIODES, Lt.

551. PECTINICORNIS, L.
552. SERRICORNIS, S.

SPECIMEN.

PERLIDÆ.

PERLA, Gf.

553, 554. NIVICOLA, Fh. (male).
555, 556. " (female).

NEMOURA, Lt.

557 – 559. NIVALIS, Fh.

CASE No. 3.

PAPILIONIDÆ.

PAPILIO, L.

560, 561. TURNUS, L.
562, 563. ASTERIAS, C.

PONTIA, F.

564, 565. OLERACEA, H.
566, 567. CASTA, K.

COLIAS, F.

568, 569. PHILODICE, Godart.

VANESSA, F.

570, 571. ANTIOPA, L.

CYNTHIA, F.

572, 573. ATALANTA, L.

LIMENITIS, F.

574, 575. ARTHEMIS, Dr.

ARGYNNIS, F.

576. IDALIA, Dr.

DANAUS, Lt.

577, 578. PLEXIPPUS, C.

SPHINGIDÆ.

SPHINX, L.

579. QUINQUEMACULATA, H.
580. CINEREA, H.

PHILAMPELUS, H.

581. SATELLITIA, L.
582. ACHEMON, Dr.

SESIA, F.

583. DIFFINIS, Bd.

BOMBYCIDÆ.

ATTACUS, Gr.

584. CECROPIA, L.
585, 586. PROMETHEA, Dr.
587. LUNA, L.

AGLIA, Oc.

588. IO, F.

DRYOCAMPA, H.

589. IMPERIALIS, Dr.

CLISIOCAMPA, Ct.

590 – 592. AMERICANA, H.

SPECIMEN.

ARCTIIDÆ.

PYGÆRA, Oc.

593. MINISTRA, Dr.

EUDRYAS.

594, 595. UNIO, Hubner.

ARCTIA, Sk.

596. ACREA, Dr.
597, 598. VIRGINICA, F.
599. RUBRICOSA, H.
600. ISABELLA, A.

LITHOSIIDÆ.

DEIOPEIA, St.

601. BELLA, L.

SPECIMEN.

LITHOSIA, F.

602. VITTATA, H.

NOCTUIDÆ.

CATOCALA, Oc.

603. NUPTA, L.
604. CONSORS, A.

EUCLIDIA, Oc.

605, 606. ERECTHEA, C.

GEOMETRIDÆ.

ABRAXAS, Lh.

607, 608. ? RIBEARIA, Fh.

CATALOGUE OF PLANTS

OF THE

STATE OF NEW-YORK,

OF WHICH SPECIMENS ARE PRESERVED IN THE CABINET AT ALBANY.

By John Torrey, M. D.

N. B. The nomenclature here adopted is nearly that of the State Flora, except in the few cases where changes were required from the progress of botanical science, or for the correction of errors. Some plants were discovered within the limits of the State after the Flora was printed. These are indicated by an asterisk prefixed to their names. It has been thought proper to include in the present catalogue, all those plants which, on good authority, have been recorded as indigenous to the State, which have not yet been found by the author. These are indicated by the mark (†).

PLANTS.

RANUNCULACEÆ.

Clematis ochroleuca, *Ait*
— virginiana, *Linn.*
— verticillaris, *DC.*
(*Atragene americana*, Sims.)
Anemone nemorosa, *Linn.*
— cylindrica, *Gray.*
— virginiana, *Linn.*
— multifida, *DC.*
— pennsylvanica, *Linn.*
Hepatica triloba, *DC.*
var. 1. obtusa, *Pursh.*
var. 2. acuta, *Pursh.*
Thalictrum anemonoides, *Michx.*
— dioicum, *Linn.*
— cornuti, *Linn.*
Ranunculus aquatilis, *Linn.*
— purshii, *Richards.*
— alismæfolius, *Geyer.*
(*flammula*, Auct. Amer. non *Linn.*)
— reptans, *Linn.*
— pusillus, *Poir.*
— cymbalaria, *Pursh.*
— abortivus, *Linn.*
— recurvatus, *Poir.*
— sceleratus, *Linn.*
— pennsylvanicus, *Linn.*
— fascicularis, *Muhl.*
— repens, *Linn.*
— bulbosus, *Linn.*
— acris, *Linn.*
Caltha palustris, *Linn.*
Trollius laxus, *Salisb.*
Coptis trifolia, *Salisb.*
Helleborus viridis, *Linn.*
Aquilegia canadensis, *Linn.*
Aconitum uncinatum, *Linn.*
Zanthorhiza apiifolia, *l'Herit.*
Hydrastis canadensis, *Linn.*
Actæa rubra, *Willd.*
— alba, *Bigel.*
Cimicifuga racemosa, *Ell.* 34

MAGNOLIACEÆ.

Magnolia glauca, *Linn.*
— acuminata, *Linn.*
Liriodendron tulipifera, *Linn.*

ANONACEÆ.

Asimina triloba, *Dunal.*
(*Uvaria triloba*, Torr. & Gr.)

MENISPERMACEÆ.

Menispermum canadense, *Linn.*

BERBERIDACEÆ.

Berberis vulgaris, *Linn.*
Leontice thalictroides, *Linn.*
Jeffersonia diphylla, *Pers.*
Podophyllum peltatum, *Linn.*

CABOMBACEÆ.

Brasenia peltata, *Pursh.*
Nelumbium luteum, *Willd.*

NYMPHÆACEÆ.

Nymphæa odorata, *Ait.*
Nuphar advena, *Ait.*

Nuphar lutea, *Smith.*
var. kalmiana, *Torr. & Gr.*

SARRACENIACEÆ.

Sarracenia purpurea, *Linn.*
var. heterophylla, *Torr.*

PAPAVERACEÆ.

Chelidonium majus, *Linn.*
Sanguinaria canadensis, *Linn.*

FUMARIACEÆ.

Adlumia cirrhosa, *Raf.*
Dicentra cucullaria, *Torr.*
(*Dielytra cucullaria*, DC.)
— canadensis, *Torr.*
(*Dielytra canadensis*, DC.)
— eximia, *Torr.*
(*Dielytra eximia*, DC.)
Corydalis aurea, *Willd.*
— glauca, *Pursh.*
Fumaria officinalis, *Linn.*

CRUCIFERÆ.

Nasturtium palustre, *DC.*
— hispidum, *DC.*
— natans, *DC.*
Cardamine hirsuta, *Linn.*
— pratensis, *Linn.*
— rhomboidea, *DC.*
var. purpurea, *Torr. & Gr.*
Dentaria diphylla, *Linn.*
— maxima, *Nutt.*
— laciniata, *Muhl.*
Arabis lyrata, *Linn.*
— dentata, *Torr. & Gr.*
— hirsuta, *Scop.*
— lævigata, *DC.*
— canadensis, *Linn.*
*Turritis glabra, *Linn.*
(Western part of the State).
— stricta, *Graham.*
Barbarea vulgaris, *R. Br.*
Erysimum cheiranthoides, *Linn.*
Sisymbrium officinale, *Scop.*
— thalianum, *Gaud.*
Sinapis nigra, *Linn.*
— arvensis, *Linn.*
Draba arabisans, *Michx.*
— caroliniana, *Walt.*
— verna, *Linn.*
Camelina sativa, *Linn.*
Lepidium virginicum, *Linn.*
— campestre, *R. Br.*
Capsella bursa-pastoris, *Mœnch.*
Cakile americana, *Nutt.*
(*maritima*, var. *americana*, T. & Gr.)
Raphanus raphanistrum, *Linn.*

CAPPARIDACEÆ.

Polanisia graveolens, *Raf.*

VIOLACEÆ.

Solea concolor, *Ging.*
Viola rotundifolia, *Michx.*
— lanceolata, *Linn.*
— primulæfolia, *Linn.*
— blanda, *Willd.*
— selkirkii, *Goldie.*
— sagittata, *Ait.*
— cucullata, *Ait.*
— palmata, *Linn.*
— pedata, *Linn.*
— canadensis, *Linn.*
— rostrata, *Pursh.*
— muhlenbergii, *Torr.*
— striata, *Ait.*
— pubescens, *Ait.*
— tricolor, *var.* arvensis, DC.

CISTACEÆ.

Helianthemum canadense, *Michx.*
Hudsonia ericoides, *Linn.*
— tomentosa, *Nutt.*
Lechea major, *Michx.*
— minor, *Lam.*
— thymifolia, *Pursh.*

DROSERACEÆ.

Drosera rotundifolia, *Linn.*
— longifolia, *Linn.*
— filiformis, *Raf.*
Parnassia caroliniana, *Michx.*

HYPERICACEÆ.

Ascyrum stans, *Michx.*
Hypericum pyramidatum, *Ait.*
— kalmianum, *Linn.*
— perforatum, *Linn.*
— corymbosum, *Muhl.*
— ellipticum, *Hook.*
— mutilum, *Linn.*
(*parviflorum*, Muhl.)
— canadense, *Linn.*
— sarothra, *Michx.*
Elodea virginica, *Nutt.*

ELATINACEÆ.

Elatine americana, *Arnott.*
(*Crypta minima*, Nutt.)

CARYOPHYLLACEÆ.

Honckenya peploides, *Ehrh.*
Sagina procumbens, *Linn.*
— apetala, *Linn.*
Arenaria serpyllifolia, *Linn.*
— squarrosa, *Michx.*
— stricta, *Michx.*
— grœnlandica, *Spreng.*
Mœhringia lateriflora, *Fenzl.*
(*Arenaria lateriflora*, Linn.)
Stellaria media, *Smith.*
— longifolia, *Muhl.*
* — longipes, *Goldie.*
— borealis, *Bigel.*
Cerastium vulgatum, *Linn.*
— viscosum, *Linn.*
— arvense, *Linn.*
— oblongifolium, *Torr.*
— nutans, *Raf.*
Silene stellata, *Ait.*
— antirrhina, *Linn.*
Silene noctiflora, *Linn.*
— pennsylvanica, *Michx.*
Lychnis githago, *Lam.*
Saponaria officinalis, *Linn.*
— vaccaria, *Linn.*
Mollugo verticillata, *Linn.*

ILLECEBRACEÆ.

Anychia dichotoma, *Michx.*
Spergula arvensis, *Linn.*
— rubra, *Torr. & Gr.*
Scleranthus annuus, *Linn.*

PORTULACACEÆ.

Portulaca oleracea, *Linn.*
Claytonia virginica, *Linn.*
— caroliniana, *Michx.*

MALVACEÆ.

Abutilon avicennæ, *Gært.*
Sida spinosa, *Linn.*
Malva rotundifolia, *Linn.*
Althæa officinalis, *Linn.*
Hibiscus virginicus, *Linn.*
— moscheutos, *Linn.*
— trionum, *Linn.*

TILIACEÆ.

Tilia americana, *Linn.*

LINACEÆ.

Linum virginianum, *Linn.*
— usitatissimum, *Linn.*

GERANIACEÆ.

Geranium maculatum, *Linn.*
— carolinianum, *Linn.*
— pusillum, *Linn.*
— robertianum, *Linn.*
Erodium cicutarium, *l'Herit.*

OXALIDACEÆ.

Oxalis acetosella, *Linn.*
— violacea, *Linn.*
— stricta, *Linn.*

BALSAMINACEÆ.

Impatiens pallida, *Nutt.*
— fulva, *Nutt.*

LIMNANTHACEÆ.

Flœrkea proserpinacoides, *Willd.*

ZANTHOXYLACEÆ.

Zanthoxylum americanum, *Mill.*
Ptelea trifoliata, *Linn.*

ANACARDIACEÆ.

Rhus typhina, *Linn.*
— glabra, *Linn.*
— copallina, *Linn.*
— venenata, *DC.*
— toxicodendron, *Linn.*
— aromatica, *Ait.*

ACERACEÆ.

Acer pennsylvanicum, *Linn.*
— spicatum, *Lam.*
— saccharinum, *Wang.*
— dasycarpum, *Ehrh.*
— rubrum, *Linn.*

HIPPOCASTANACEÆ.

Æsculus hippocastanum, *Linn.*

CELASTRACEÆ.

Staphylea trifolia, *Linn.*
Celastrus scandens, *Linn.*
Euonymus atropurpureus, *Jacq.*
— americanus, *Linn.*

RHAMNACEÆ.

Rhamnus catharticus, *Linn.*
— alnifolius, *l'Herit.*
Ceanothus americanus, *Linn.*
— ovalis, *Bigel.*

VITACEÆ.

Vitis labrusca, *Linn.*
— æstivalis, *Michx.*
— cordifolia, *Michx.*
Vitis riparia, *Michx.*
Ampelopsis quinquefolia, *Michx.*

POLYGALACEÆ.

Polygala lutea, *Linn.*
— sanguinea, *Linn.*
— cruciata, *Linn.*
— verticillata, *Linn.*
— ambigua, *Nutt.*
— senega, *Linn.*
— polygama, *Walt.*
— paucifolia, *Willd.*

LEGUMINOSÆ.

Vicia sativa, *Linn.*
— tetrasperma, *Linn.*
— cracca, *Linn.*
— americana, *Muhl.*
Ervum hirsutum, *Linn.*
Lathyrus maritimus, *Bigel.*
— ochroleucus, *Hook.*
— myrtifolius, *Hook.*
— palustris, *Linn.*
Phaseolus perennis, *Walt.*
— diversifolius, *Pers.*
— helvolus, *Linn.*
Apios tuberosa, *Mœnch.*
Galactia glabella, *Michx.*
Clitoria mariana, *Linn.*
Amphicarpæa monoica, *Tor. & Gr.*
Robinia pseudacacia, *Linn.*
Tephrosia virginiana, *Pers.*
Trifolium arvense, *Linn.*
— pratense, *Linn.*
— reflexum, *Linn.*
— repens, *Linn.*
— agrarium, *Linn.*
Melilotus officinalis, *Willd.*
— leucantha, *Koch.*
Medicago sativa, *Linn.*
— lupulina, *Linn.*
Astragalus canadensis, *Linn.*
Phaca neglecta, *Torr. & Gr.*
Stylosanthes elatior, *Swartz.*

Desmodium nudiflorum, *DC.*
— acuminatum, *DC.*
— pauciflorum, *DC.*
— rotundifolium, *DC.*
— canadense, *DC.*
— canescens, *DC.*
— lævigatum, *DC.*
— dillenii, *Darlingt.*
— cuspidatum, *Torr. & Gr.*
— viridiflorum, *Beck.*
— marilandicum, *Boott.*
— ciliare, *DC.*
— rigidum, *DC.*
— paniculatum, *DC.*
— rotundifolium, *DC.*
Lespedeza procumbens, *Michx.*
— repens, *Torr. & Gr.*
— violacea, *Pers.*
var. 1. divergens, *T. & Gr.*
var. 2. sessiliflora, *T. & Gr.*
var. 3. angustifolia, *T. & G.*
— hirta, *Ell.*
— capitata, *Michx.*
Genista tinctoria, *Linn.*
Crotalaria sagittalis, *Linn.*
Lupinus perennis, *Linn.*
Baptisia tinctoria, *R. Br.*
— australis, *R. Br.*
Cercis canadensis, *Linn.*
Cassia marilandica, *Linn.*
— chamæcrista, *Linn.*
— nictitans, *Linn.*
Gymnocladus canadensis, *Lam.*
Gleditschia triacanthos, *Linn.*

ROSACEÆ.

Prunus americana, *Marshall.*
— maritima, *Wang.*
Cerasus pumila, *Michx.*
— virginiana, *DC.*
— serotina, *DC.*
Spiræa opulifolia, *Linn.*
— salicifolia, *Linn.*
— tomentosa, *Linn.*
Spiræa aruncus, *Linn.*
Gillenia trifoliata, *Mœnch.*
— stipulacea, *Nutt.*
Geum virginianum, *DC.*
— strictum, *Ait.*
— rivale, *Linn.*
— triflorum, *Pursh.*
Waldensteinia fragarioides, *Tratt.*
(*Dalibarda fragarioides*, Mx.)
Sanguisorba canadensis, *Linn.*
Agrimonia eupatoria, *Linn.*
Potentilla norvegica, *Linn.*
— tridentata, *Ait.*
— canadensis, *Linn.*
— argentea, *Linn.*
— arguta, *Pursh.*
— fruticosa, *Linn.*
— anserina, *Linn.*
Comarum palustre, *Linn.*
Fragaria virginiana, *Ehrh.*
— vesca, *Linn.*
Dalibarda repens, *Linn.*
Rubus odoratus, *Linn.*
— triflorus, *Richards.*
— strigosus, *Michx.*
— occidentalis, *Linn.*
— villosus, *Ait.*
— canadensis, *Linn.*
— hispidus, *Linn.*
— cuneifolius, *Pursh.*
Rosa carolina, *Linn.*
— lucida, *Ehrh.*
— blanda, *Ait.*
— rubiginosa, *Linn.*
Cratægus oxyacantha, *Linn.*
— crus-galli, *Linn.*
— coccinea, *Linn.*
— tomentosa, *Linn.*
— punctata, *Jacq.*
Pyrus coronaria, *Linn.*
— arbutifolia, *Linn. f.*
var. 1. erythrocarpa, *Hook.*
var. 2. melanocarpa, *Hook.*
— americana, *DC.*

Amelanchier canadensis, *T. & Gr.*
var. 1. botryapium, *T. & G.*
var. 2. oblongifolia, *T. & G.*
var. 3. rotundifolia, *T. & G.*
var. 4. oligocarpa, *T. & G.*

MELASTOMACEÆ.

Rhexia virginica, *Linn.*

LYTHRACEÆ.

Lythrum hyssopifolia, *Linn.*
— salicaria, *Linn.*
Ammannia humilis, *Michx.*
Decodon verticillatum, *Ell.*
Cuphea viscosissima, *Jacq.*

ONAGRACEÆ.

Epilobium angustifolium, *Linn.*
— alpinum, *Linn.*
— coloratum, *Muhl.*
— molle, *Torr.*
— palustre, *Linn.*
Œnothera biennis, *Linn.*
— fruticosa, *Linn.*
— linearis, *Michx.*
— chrysantha, *Michx.*
— pumila, *Linn.*
Ludwigia alternifolia, *Linn.*
— sphærocarpa, *Ell.*
— palustris, *Ell.*
Circæa lutetiana, *Linn.*
— alpina, *Linn.*
Proserpinaca palustris, *Ell.*
— pectinacea, *Lam.*
Myriophyllum spicatum, *Linn.*
— verticillatum, *Linn.*
— heterophyllum, *Michx.*
— ambiguum, *Nutt.*
— tenellum, *Bigel.*
Hippuris vulgaris, *Linn.*

CACTACEÆ.

Opuntia vulgaris, *Mill.*

GROSSULACEÆ.

Ribes cynosbati, *Linn.*
— rotundifolium, *Michx.*
— lacustre, *Poir.*
* — hirtellum, *Michx.*
— prostratum, *l'Herit.*
— floridum, *Linn.*

CUCURBITACEÆ.

Sicyos angulatus, *Linn.*
Echinocystis lobata, *T. & Gr.*

CRASSULACEÆ.

Tillæa simplex, *Nutt.*
†Sedum telephioides, *Michx.*
— telephium, *Linn.*
Penthorum sedoides, *Linn.*

SAXIFRAGACEÆ.

Saxifraga aizoides, *Linn.*
— virginiensis, *Michx.*
— pennsylvanica, *Linn.*
Heuchera americana, *Linn.*
Mitella diphylla, *Linn.*
— nuda, *Linn.*
Tiarella cordifolia, *Linn.*
Chrysosplenium americana, *Schwei.*

HAMAMELACEÆ.

Hamamelis virginica, *Linn.*

UMBELLIFERÆ.

Hydrocotyle umbellata, *Linn.*
Crantzia lineata, *Nutt.*
Sanicula marilandica, *Linn.*
— canadensis, *Linn.*
Discopleura capillacea, *DC.*
Bupleurum rotundifolium, *Linn.*
Cicuta maculata, *Linn.*
— bulbifera, *Linn.*
Sium latifolium, *Linn.*
— lineare, *Michx.*
Cryptotænia canadensis, *DC.*
Zizia cordata, *Koch.*

Zizia aurea, *Koch.*
— integerrima, *DC.*
Thaspium atropurpureum, *Nutt.*
— aureum, *Nutt.*
— barbinode, *Nutt.*
Æthusa cynapium, *Linn.*
Conioselenium canadense, *T. & Gr.*
Archangelica atropurpurea, *Hoff.*
— hirsuta, *T. & Gr.*
Archemora rigida, *DC.*
Pastinaca sativa, *Linn.*
Heracleum lanatum, *Michx.*
Daucus carota, *Linn.*
Osmorhiza longistylis, *DC.*
— brevistylis, *DC.*
Conium maculatum, *Linn.*
Erigenia bulbosa, *Nutt.*

ARALIACEÆ.

Aralia racemosa, *Linn.*
— nudicaulis, *Linn.*
— hispida, *Michx.*
Panax quinquefolium, *Linn.*
— trifolium, *Linn.*

CORNACEÆ.

Cornus alternifolia, *Linn. f.*
— circinata, *l'Herit.*
— stolonifera, *Michx.*
— paniculata, *l'Herit.*
— sericea, *Linn.*
— florida, *Linn.*
— canadensis, *Linn.*

CAPRIFOLIACEÆ.

Linnæa borealis, *Gron.*
Symphoricarpus racemosus, *Mx.*
— vulgaris, *Mx.*
Lonicera sempervirens, *Ait.*
† — grata, *Ait.*
† — flava, *Sims.*
— hirsuta, *Eaton.*
— parviflora, *Linn.*
— ciliata, *Muhl.*
Lonicera cærulea, *Linn.*
— oblongifolia, *Hook.*
Diervilla trifida, *Mœnch.*
Triosteum perfoliatum, *Linn.*
Sambucus pubens, *Michx.*
— canadensis, *Linn.*
Viburnum nudum, *Linn.*
— prunifolium, *Linn.*
— lentago, *Linn.*
— dentatum, *Linn.*
— pubescens, *Pursh.*
— acerifolium, *Linn.*
— pauciflorum, *Pylaie.*
— opulus, *Linn.*
— lantanoides, *Michx.*

RUBIACEÆ.

Galium aparine, *Linn.*
— trifidum, *Linn.*
— asprellum, *Michx.*
— triflorum, *Michx.*
— pilosum, *Ait.*
— circæzans, *Michx.*
— boreale, *Linn.*
Cephalanthus occidentalis, *Linn.*
Mitchella repens, *Linn.*
Hedyotis cærulea, *Hook.*
— ciliolata, *Torr.*
— longifolia, *Hook.*
— glomerata, *Ell.*

VALERIANACEÆ.

Valeriana sylvatica, *Richards.*
Fedia fagopyrum, *T. & Gr.*

DIPSACEÆ.

Dipsacus sylvestris, *Linn.*

COMPOSITÆ.

Vernonia noveboracensis, *Willd.*
Liatris cylindrica, *Michx.*
— spicata, *Willd.*
— scariosa, *Willd.*
Eupatorium purpureum, *Linn.*

Eupatorium hyssopifolium, *Linn.*
— album, *Linn.*
— leucolepis, *T. & Gr.*
— resinosum, *Torr.*
— teucrifolium, *Willd.*
— rotundifolium, *Linn.*
— sessilifolium, *Linn.*
— perfoliatum, *Linn.*
— ageratoides, *Linn. f.*
— aromaticum, *Linn.*
Mikania scandens, *Willd.*
Nardosmia palmata, *Hook.*
Tussilago farfara, *Linn.*
Sericocarpus conyzoides, *Nees.*
— solidagineus, *Nees.*
Aster corymbosus, *Ait.*
— macrophyllus, *Linn.*
— radula, *Ait.*
— spectabilis, *Ait.*
— patens, *Ait.*
— lævis, *Willd.*
— undulatus, *Linn.*
— cordifolius, *Linn.*
— sagittifolius, *Willd.*
— ericoides, *Linn.*
— multiflorus, *Ait.*
— dumosus, *Linn.*
— tradescanti, *Linn.*
— miser, *Linn.*
— simplex, *Willd.*
— tenuifolius, *Linn.*
— greenii, *T. & Gr.*
(a var. of *A. carneus*, Nees?)
— longifolius, *Lam.*
(*laxus*, Willd.; *elodes*, T. & G.)
— puniceus, *Linn.*
— prenanthoides, *Muhl.*
— novæ-angliæ, *Linn.*
— concolor, *Linn.*
— acuminatus, *Michx.*
— ptarmicoides, *T. & Gr.*
— flexuosus, *Nutt.*
— linifolius, *Linn.*
Diplopappus linariifolius, *Hook.*
Diplopappus cornifolius, *Darlingt.*
— umbellatus, *T. & Gr.*
Erigeron canadense, *Linn.*
— bellidifolium, *Muhl.*
— philadelphicum, *Linn.*
— annuum, *Pers.*
— strigosum, *Muhl.*
Solidago squarrosa, *Muhl.*
— bicolor, *Linn.*
— latifolia, *Linn.*
— cæsia, *Linn.*
— stricta, *Ait.*
— virga-aurea, *Linn.*
* — thyrsoidea, *E. Meyer.*
— rigida, *Linn.*
— ohioensis, *Riddell.*
— sempervirens, *Linn.*
— neglecta, *T. & Gr.*
— patula, *Muhl.*
— arguta, *Ait.*
— muhlenbergii, *T. & Gr.*
— ulmifolia, *Muhl.*
— odora, *Ait.*
— nemoralis, *Ait.*
— canadensis, *Linn.*
— serotina, *Ait.*
— gigantea, *Ait.*
— lanceolata, *Linn.*
— tenuifolia, *Pursh.*
Chrysopsis falcata, *Ell.*
— mariana, *Nutt.*
Baccharis halimifolia, *Linn.*
Pluchea camphorata, *DC.*
Inula helenium, *Linn.*
Polymnia canadensis, *Linn.*
— uvedalia, *Linn.*
Silphium trifoliatum, *Linn.*
Iva frutescens, *Linn.*
Ambrosia trifida, *Linn.*
— artemisiæfolia, *Linn.*
Xanthium strumarium, *Linn.*
— echinatum, *Murr.*
— spinosum, *Linn.*
Heliopsis lævis, *Pers.*

Rudbeckia hirta, *Linn.*
— laciniata, *Linn.*
Lepachys pinnata, *T. & Gr.*
Helianthus giganteus, *Linn.*
— strumosus, *Linn.*
— decapetalus, *Linn.*
— divaricatus, *Linn.*
— tuberosus, *Linn.*
Actinomeris squarrosa, *Nutt.*
Coreopsis trichosperma, *Michx.*
— rosea, *Nutt.*
Bidens frondosa, *Linn.*
— connata, *Muhl.*
— cernua, *Linn.*
— chrysanthemoides, *Michx.*
— beckii, *Torr.*
— bipinnata, *Linn.*
Helenium autumnale, *Linn.*
Maruta cotula, *DC.*
Anthemis arvensis, *Linn.*
Achillea millefolium, *Linn.*
Leucanthemum vulgare, *Lam.*
Tanacetum vulgare, *Linn.*
Artemisia canadensis, *Michx.*
— caudata, *Michx.*
— vulgaris, *Linn.*
Gnaphalium decurrens, *Ives.*
— polycephalum, *Michx.*
— uliginosum, *Linn.*
— purpureum, *Linn.*
Antennaria margaritacea, *R. Br.*
— plantaginifolia, *R. Br.*
Filago germanica, *Linn.*
Erechtites hieracifolia, *Raf.*
Cacalia suaveolens, *Linn.*
— atriplicifolia, *Linn.*
Senecio vulgaris, *Linn.*
— aureus, *Linn.*
Arnica mollis, *Hook.*
Centaurea cyanus, *Linn.*
Cnicus benedictus, *Linn.*
Cirsium lanceolatum, *Scop.*
— discolor, *Spreng.*
— muticum, *Michx.*
Cirsium pumilum, *Spreng.*
— horridulum, *Michx.*
— arvense, *Scop.*
Lappa major, *Gært.*
Krigia virginica, *Willd.*
Cynthia virginica, *Don.*
(*Troximon virginicum*, Pers.)
Cichorium intybus, *Linn.*
Hieracium canadense, *Michx.*
— scabrum, *Michx.*
— gronovii, *Linn.*
— venosum, *Linn.*
— paniculatum, *Linn.*
Nabalus albus, *Hook.*
— altissimus, *Hook.*
— fraseri, *DC.*
— nanus, *DC.*
— boottii, *DC.*
Taraxacum dens-leonis, *Desf.*
Lactuca elongata, *Muhl.*
var. 1. longifolia, *T. & Gr.*
var. 2. sanguinea, *T. & Gr.*
Mulgedium acuminatum, *DC.*
— leucophæum, *DC.*
Sonchus oleraceus, *Linn.*
— asper, *Vill.*
— arvensis, *Linn.*

LOBELIACEÆ.

Lobelia kalmii, *Linn.*
— nuttallii, *Rœm. & Schult.*
— spicata, *Lam.*
— dortmanna, *Linn.*
— siphilitica, *Linn.*
— cardinalis, *Linn.*
— inflata, *Linn.*

CAMPANULACEÆ.

Campanula rotundifolia, *Linn.*
— aparinoides, *Pursh.*
— americana, *Linn.*
Specularia perfoliata, *A. DC.*

ERICACEÆ.

I. ERICINEÆ.

Arctostaphylos uva-ursi, *Spreng.*
Clethra alnifolia, *Linn.*
Epigæa repens, *Linn.*
Gautiera procumbens, *Torr.*
(*Gaultheria procumbens*, Linn.)
Andromeda polifolia, *Linn.*
— calyculata, *Linn.*
— mariana, *Linn.*
— racemosa, *Linn.*
— ligustrina, *Muhl.*
Rhododendron maximum, *Linn.*
— lapponicum, *Wahl.*
— nudiflorum, *Torr.*
— viscosum, *Torr.*
† — hispidum, *Torr.*
Rhodora canadensis, *Linn.*
(*Rhododendron rhodora*, G. Don.)
Kalmia latifolia, *Linn.*
— angustifolia, *Linn.*
— glauca, *Ait.*
Ledum palustre, *Linn.*
var. latifolium, *Michx.*
(*L. latifolium*, Ait.)

II. VACCINEÆ.

Vaccinium uliginosum, *Linn.*
— vacillans, *Kalm.*
— pennsylvanicum, *Lam.*
(*virgatum*, Ait.; *tenellum*, Ph.)
— canadense, *Kalm.*
— stamineum, *Linn.*
— oxycoccus, *Linn.*
— macrocarpon, *Ait.*
Gaylussacia dumosa, *T. & Gr.*
(*G. hirtella*, Torr. Fl. N. Y.)
(*Vaccinium dumosum*, Andr.)
— frondosa, *T. & Gr.*
(*Vaccinium frondosum*, Linn.)
— resinosa, *T. & Gr.*
(*Vaccinium resinosum*, Linn.)
Chiogenes hipsidula, *T. & Gr.*
(*Vaccinium hispidulum*, Linn.;
Gaultheria hispidula, Pursh.)

III. PYROLEÆ.

Pyrola rotundifolia, *Linn.*
— asarifolia, *Michx.*
var. uliginosa, *Gray.*
(*P. uliginosa*, Torr.)
— elliptica, *Nutt.*)
— chlorantha, *Swartz.*
— secunda, *Linn.*
— uniflora, *Linn.*
Chimaphila umbellata, *Nutt.*
— maculata, *Pursh.*

IV. MONOTROPEÆ.

Monotropa uniflora, *Linn.*
— lanuginosa, *Michx.*
Pterospora andromedea, *Nutt.*

AQUIFOLIACEÆ.

Ilex opaca, *Ait.*
— montana, *T. & Gr.*
(*I. ambigua*, Torr. Fl. N. Y. 2. p. 2.)
Prinos verticillatus, *Linn.*
— lævigatus, *Pursh.*
— glaber, *Linn.*
Nemopanthes canadensis, *DC.*

EBENACEÆ.

Diospyros virginiana, *Linn.*

PLANTAGINACEÆ.

Plantago major, *Linn.*
— cordata, *Lam.*
— lanceolata, *Linn.*
— maritima, *Linn.*
— pusilla, *Nutt.*
— virginica, *Linn.*

PLUMBAGINACEÆ.

Statice limonium, *Linn.*

PRIMULACEÆ.

Primula mistassinica, *Michx.*
Trientalis americana, *Pursh.*
Lysimachia stricta, *Ait.*
— quadrifolia, *Linn.*
— ciliata, *Linn.*
— lanceolata, *Walt.*
var. hybrida.
(*L. hybrida*, Michx.)
— thyrsiflora, *Linn.*
Anagallis arvensis, *Linn.*
Samolus floribundus, *Kunth.*
(*S. valerandi*, Auct. Amer. non Linn.)
Hottonia inflata, *Ell.*

LENTIBULACEÆ.

Utricularia inflata, *Walt.*
— vulgaris, *Linn.*
— minor, *Linn.*
— cornuta, *Michx.*
— striata, *Le Conte.*
— intermedia, *Heyne.*
— purpurea, *Walt.*
* — clandestina, *Nutt. mss.*
Pinguicula vulgaris, *Linn.*

OROBANCHACEÆ.

Epiphegus americana, *Nutt.*
Orobanche americana, *Linn*
— uniflora, *Linn.*

BIGNONIACEÆ.

Catalpa bignonioides, *Walt.*
(*syringæfolia*, Sims.)
Martynia proboscidea, *Glov.*

ACANTHACEÆ.

Dianthera americana, *Linn.*

SCROPHULARIACEÆ.

Verbascum thapsus, *Linn.*
— blattaria, *Linn.*
— lychnitis, *Linn.*
Scrophularia marilandica, *Linn.*
Linaria elatine, *Desf.*
— vulgaris, *Mœnch.*
— canadensis, *Spreng.*
Collinsia verna, *Nutt.*
Chelone glabra, *Linn.*
Pentstemon pubescens, *Willd.*
Mimulus ringens, *Linn.*
— alatus, *Ait.*
Gratiola virginica, *Linn.*
— aurea, *Muhl.*
Ilysanthus gratioloides, *Benth.*
(*Lindernia dilatata* & *attenuata*, Muhl.)
Buchnera americana, *Linn.*
Limosella aquatica, *Linn.*
var. tenuifolia, *Hoff.*
Veronica serpyllifolia, *Linn.*
— officinalis, *Linn.*
— beccabunga, *Linn.*
var. americana, *Torr.*
— anagallis, *Linn.*
— scutellata, *Linn.*
— peregrina, *Linn.*
— arvensis, *Linn.*
— agrestis, *Linn.*
— hederæfolia, *Linn.*
— virginica, *Linn.*
(*Pæderota virginica*, Torr. Fl. N. York.)
Gerardia tenuifolia, *Vahl.*
— purpurea, *Linn.*
— maritima, *Raf.*
— pedicularia, *Linn.*
— flava, *Pursh.*
— quercifolia, *Pursh.*
Castilleja coccinea, *Spreng.*
Pedicularis canadensis, *Linn.*
— lanceolata, *Michx.*
Melampyrum americanum, *Michx.*

VERBENACEÆ.

Verbena hastata, *Linn.*
— urticifolia, *Linn.*

Verbena spuria, *Linn.*
— angustifolia, *Linn.*
Phryma leptostachya, *Linn.*

LABIATÆ.

Isanthus cæruleus, *Michx.*
Mentha viridis, *Linn.*
— piperita, *Linn.*
— canadensis, *Linn.*
Lycopus sinuatus, *Ell.*
— virginicus, *Linn.*
Monarda didyma, *Linn.*
— fistulosa, *Linn.*
— punctata, *Linn.*
Blephilia hirsuta, *Benth.*
Pycnanthemum incanum, *Michx.*
— clinopodioides, *T. & Gr.*
— torrei, *Benth.*
— muticum, *Michx.*
— lanceolatum, *Michx.*
— linifolium, *Pursh.*
Origanum vulgare, *Linn.*
Collinsonia canadensis, *Linn.*
Cunila mariana, *Linn.*
Hedeoma pulegioides, *Pers.*
Micromeria glabella, *Benth.*
var. angustifolia, *Torr.*
Melissa clinopodium, *Benth.*
— officinalis, *Linn.*
Prunella vulgaris, *Linn.*
Scutellaria pilosa, *Michx.*
— integrifolia, *Linn.*
— parvula, *Michx.*
— nervosa, *Pursh.*
— galericulata, *Linn.*
— lateriflora, *Linn.*
Lophanthus nepetoides, *Benth.*
— scrophulariæfolius, *Benth.*
Nepeta cataria, *Linn.*
— glechoma, *Benth.*
Dracocephalum parviflorum, *Nutt.*
Physostegia virginiana, *Benth.*
Lamium amplexicaule, *Linn.*
Leonurus cardiaca, *Linn.*
Marrubium vulgare, *Linn.*
Galeopsis tetrahit, *Linn.*
Stachys aspera, *Michx.*
— palustris, *Linn.*
— hyssopifolia, *Michx.*
Trichostema dichotoma, *Linn.*
Teucrium canadense, *Linn.*
*Phlomis tuberosa, *Linn.*

BORAGINACEÆ.

Onosmodium virginianum, *DC.*
(*hispidum*, Michx.)
* — carolinianum, *DC.*
Echium vulgare, *Linn.*
Pulmonaria virginica, *Linn.*
Lithospermum arvense, *Linn.*
— officinale, *Linn.*
* — latifolium, *Michx.*
Batschia canescens, *Michx.*
Lycopsis arvensis, *Linn.*
Myosotis palustris, *Roth.*
— arvensis, *Sibth.*
Symphytum officinale, *Linn.*
Cynoglossum officinale, *Linn.*
— virginicum, *Linn.*
— morisoni, *DC.*
(*Myosotis virginiana*, Linn.; *Echinospermum virginicum*, Lehm.)
Echinospermum lappula, *Lehm.*

HYDROPHYLLACEÆ.

Hydrophyllum virginicum, *Linn.*
— canadense, *Linn.*
— appendiculatum, *Michx.*

POLEMONIACEÆ.

Phlox divaricata, *Linn.*
— subulata, *Linn.*
Polemonium reptans, *Linn.*

DIAPENSIACEÆ.

Diapensia lapponica, *Linn.*

CONVOLVULACEÆ.

Convolvulus arvensis, *Linn.*
— panduratus, *Linn.*
Calystegia sepium, *R. Br.*
— spithamæa, *Pursh.*
Cuscuta epilinum, *Weihe.*
— gronovii, *Choisy.*
† — umbrosa, *Beyrich.*

SOLANACEÆ.

Nicotiana rustica, *Linn.*
Datura stramonium, *Linn.*
var. tatula, *Torr.*
Hyoscyamus niger, *Linn.*
Nicandra physaloides, *Gært.*
Physalis viscosa, *Linn.*
Solanum dulcamara, *Linn.*
— nigrum, *Linn.*
— carolinianum, *Linn.*

GENTIANACEÆ.

Gentiana saponaria, *Linn.*
(*linearis*, Frœl.; *puberula*, Mx.)
— andrewsii, *Griseb.*
† — alba, *Muhl. cat.*
(*ochroleuca*, Frœl. in part, Tor. Fl. N. Y.; *flavida*, Gray.)
— pneumonanthe, *Linn.*
(*saponaria*, var. *linearis*, Frœl., Torr.)
— quinqueflora, *Lam.*
— crinita, *Frœl.*
— detonsa, *Fries.*
Frasera caroliniensis, *Walt.*
Halenia deflexa, *Griseb.*
Erythræa centaurium, *Pers.*
— ramosissima, *Pers.*
(*muhlenbergii*, Griseb.; *pulchella*, Darlingt.)
Bartonia tenella, *Muhl.*
Sabbatia stellaris, *Pursh.*
— angularis, *Pursh.*
— chloroides, *Pursh.*
Menyanthes trifoliata, *Linn.*
Limnanthemum lacunosum, *Griseb.*

APOCYNACEÆ.

Apocynum androsæmifolium, *Linn.*
— cannabinum, *Linn.*

ASCLEPIADACEÆ.

Asclepias cornuti, *Decaisne.*
(*syriaca*, Linn.)
— purpurascens, *Linn.*
— phytolaccoides, *Pursh.*
— obtusifolia, *Michx.*
— variegata, *Linn.*
— quadrifolia, *Jacq.*
— incarnata, *Linn.*
— tuberosa, *Linn.*
— verticillata, *Linn.*
Acerates viridiflora, *Ell.*

OLEACEÆ.

Fraxinus americana, *Linn.*
— sambucifolia, *Lam.*
— pubescens, *Walt.*
Ligustrum vulgare, *Linn.*

ARISTOLOCHIACEÆ.

Aristolochia serpentaria, *Linn.*
Asarum canadense, *Linn.*

CHENOPODIACEÆ.

Chenopodium album, *Linn.*
— hybridum, *Linn.*
* — murale, *Linn.*
*Roubieva multifida, *Moq.*
— botrys, *J. Carey.*
(*Ambrina botrys*, Moq.)
— anthelmintica.
(*Ambrina anthelmintica*, Spach.)
var. ambrosioides, *Spach.*
(*Ambrina ambrosioides*, Spach.)
Blitum maritimum, *Nutt.*
— capitatum, *Linn.*
— bonus-henricus, *C. A. Mey.*
Atriplex patula, *Linn.*

Obione arenaria, *Moq.*
Acnida cannabina, *Linn.*
— rusocarpa, *Michx.*
Salicornia herbacea, *Linn.*
— mucronata, *Lag.*
— ambigua, *Michx.*
Sueda maritima, *Moq.*
Salsola kali, *Linn.*

AMARANTHACEÆ.

Amaranthus hybridus, *Linn.*
— græcizans, *Linn.*
— pumilus, *Raf.*
— deflexus, *Willd.?*
* — tamariscinus, *Nutt.*

POLYGONACEÆ.

Polygonum orientale, *Linn.*
— fagopyrum, *Linn.*
— convolvulus, *Linn.*
— cilinode, *Michx.*
— dumetorum, *Linn.*
— sagittatum, *Linn.*
— arifolium, *Linn.*
— amphibium, *Linn.*
var. 1. aquaticum, *Linn.*
var. 2. terrestre, *Torr.*
— persicaria, *Linn.*
— pennsylvanicum, *Linn.*
— hydropiperoides, *Michx.*
(*mite*, Pers., *not of* Schrank.)
— hydropiper, *Linn.*
— virginianum, *Linn.*
— aviculare, *Linn.*
— maritimum, *Linn.*
— tenue, *Michx.*
— articulatum, *Linn.*
Rumex crispus, *Linn.*
— obtusifolius, *Linn.*
— verticillatus, *Linn.*
— britanica, *Linn.*
— acetosella, *Linn.*

PHYTOLACCACEÆ.

Phytolacca decandra, *Linn.*

LAURACEÆ.

Sassafras officinale, *Nees.*
Benzoin odoriferum, *Nees.*

THYMELACEÆ.

Dirca palustris, *Linn.*

ELEAGNACEÆ.

Shepherdia canadensis, *Nutt.*

SANTALACEÆ.

Comandra umbellata, *Nutt.*
Nyssa multiflora, *Wang.*

ULMACEÆ.

Ulmus americana, *Linn.*
— fulva, *Michx.*
— racemosa, *Thomas.*
Celtis occidentalis, *Linn.*

SAURURACEÆ.

Saururus cernuus, *Linn.*

CERATOPHYLLACEÆ.

Ceratophyllum echinatum, *A. Gray.*

CALLITRICHACEÆ.

Callitriche verna, *Linn.*

PODOSTEMACEÆ.

Podostemum ceratophyllum, *Michx.*

EUPHORBIACEÆ.

Euphorbia helioscopia, *Linn.*
— platyphylla, *Linn.*
— corollata, *Linn.*
— hypericifolia, *Linn.*
— maculata, *Linn.*
— ipecacuanha, *Linn.*
— polygonifolia, *Linn.*
Acalypha virginica, *Linn.*
* — gracilens, *Gray.*

EMPETRACEÆ.

Empetrum nigrum, *Linn.*
Corema conradi, *Torr.*

JUGLANDACEÆ.

Juglans nigra, *Linn.*
— cinerea, *Linn.*
Carya alba, *Nutt.*
— tomentosa, *Nutt.*
— glabra, *Torr.*
(*porcina*, Nutt.)
— amara, *Nutt.*

CUPULIFERÆ.

Ostrya virginica, *Willd.*
Carpinus americana, *Michx.*
Corylus americana, *Walt.*
— rostrata, *Ait.*
Quercus phellos, *Linn.*
— nigra, *Linn.*
— tinctoria, *Bartr.*
— coccinea, *Wang.*
— rubra, *Linn.*
— palustris, *Du Roi.*
— ilicifolia, *Wang.*
— macrocarpa, *Michx.*
† — olivæformis, *Michx.*
— alba, *Linn.*
— bicolor, *Willd.*
— montana, *Willd.*
— castanea, *Willd.*
— prinoides, *Willd.*
Fagus ferruginea, *Ait.*
Castanea vesca, *var.* americana, *Mx.*
— pumila, *Michx.*

MYRICACEÆ.

Myrica gale, *Linn.*
— cerifera, *Linn.*
Comptonia asplenifolia, *Ait.*

BETULACEÆ.

Betula populifolia, *Ait.*
— lenta, *Linn.*
Betula excelsa, *Ait.*
— papyracea, *Ait.*
— nigra, *Linn.*
— nana, *Linn.*
Alnus serrulata, *Willd.*
— incana, *Willd.*
— viridis, *Michx.*

SALICACEÆ.

Salix candida, *Willd.*
— tristis, *Ait.*
— pumila, *Marshall.*
(*conifera*, Muhl.; *muhlenbergiana*, Barr.)
— discolor, *Muhl.*
— viminalis, *Linn.*
— cordata, *Muhl.*
var. 1. rigida, *Carey.*
(*S. rigida*, Muhl.)
var. 2. myricoides, *Carey.*
— angustata, *Pursh.*
— rostrata, *Richards.*
— vitellina, *Linn.*
— nigra, *Marshall.*
— longifolia, *Muhl.*
— pedicellaris, *Pursh.*
— uva-ursi, *Pursh.*
(*cutleri*, Tuckerm.)
Populus tremuloides, *Michx.*
— grandidentata, *Michx.*
— heterophylla, *Linn.*
† — nigra, *Linn.*
— balsamifera, *Linn.*
† — candicans, *Ait.*

BALSAMIFLUÆ.

Liquidambar styraciflua, *Linn.*

PLATANACEÆ.

Platanus occidentalis, *Linn.*

URTICACEÆ.

Morus alba, *Linn.*
— rubra, *Linn.*
Humulus lupulus, *Linn.*

Cannabis sativa, *Linn.*
Urtica dioica, *Linn.*
— urens, *Linn.*
— canadensis, *Linn.*
* — gracilis, *Ait.*
(*procera*, Willd.)
Adike pumila, *Raf.*
(*Pilea pumila*, Gray.)
Bœhmeria cylindrica, *Willd.*
Parietaria pennsylvanica, *Muhl.*

CONIFERÆ.

†Pinus resinosa, *Soland.*
— rigida, *Mill.*
— strobus, *Linn.*
† — mitis, *Michx.*
— balsamea, *Linn.*
— canadensis, *Linn.*
— nigra, *Ait.*
— pendula, *Ait.*
Thuya occidentalis, *Linn.*
Cupressus thuyoides, *Linn.*
Juniperus communis, *Linn.*
— virginiana, *Linn.*
Taxus canadensis, *Willd.*

ARACEÆ.

Arisæma triphyllum, *Torr.*
(*Arum triphyllum*, Linn.)
— dracontium, *Schott.*
Peltandra virginica, *Raf.*
Calla palustris, *Linn.*
Symplocarpus fœtidus, *Salisb.*
Orontium aquaticum, *Linn.*
Acarus calamus, *Linn.*

LEMNACEÆ.

Lemna minor, *Linn.*
— perpusilla, *Torr.*
— trisulca, *Linn.*
— gibba, *Linn.*
— polyrhiza, *Linn.*

TYPHACEÆ.

Typha latifolia, *Linn.*
Typha angustifolia, *Linn.*
Sparganium ramosum, *Huds.*
— simplex, *Huds.*
var. angustifolium, *Torr.*
(*S. angustifolium*, Michx.)

NAIADACEÆ.

Naias canadensis, *Michx.*
Zostera marina, *Linn.*
Ruppia maritima, *Linn.*
Zannichellia palustris, *Linn.*
Potamogeton natans, *Linn.*
var. fluitans, *Torr.*
(*P. fluitans*, Smith ?)
— heterophyllus, *Schreb.*
— hybridus, *Michx.*
— lucens, *Linn.*
— perfoliatus, *Linn.*
— compressus, *Linn.*
(*zosteræfolius*, Schum.)
— pusillus, *Linn.*
— pauciflorus, *Pursh.*
— pectinatus, *Linn.*

ALISMACEÆ.

Alisma plantago, *Linn.*
Sagittaria sagittifolia, *Linn.*
— pusilla, *Nutt.*
(*Echinodorus subalatus*, Gray.)

JUNCAGINACEÆ.

Triglochin palustre, *Linn.*
— maritimum, *Linn.*
— elatum, *Nutt.*
Scheuchzeria palustris, *Linn.*

HYDROCHARIDACEÆ.

Limnobium spongia, *Richard.*
(*Hydrocharis cordifolia*, Nutt.)
Udora canadensis, *Nutt.*
Vallisneria canadensis, *Linn.*

ORCHIDACEÆ.

Microstylos monophyllos, *Lindl.*
— ophioglossoides, *Nutt.*

Liparis liliifolia, *Richard.*
— lœselii, *Richard.*
Corallorhiza innata, *R. Br.*
— odontorhiza, *Nutt.*
— multiflora, *Nutt.*
Aplectrum hyemale, *Nutt.*
Tipularia discolor, *Nutt.*
Calypso borealis, *Salisb.*
Orchis spectabilis, *Linn.*
Gymnadenia tridentata, *Lindl.*
Platanthera obtusata, *Lindl.*
— orbiculata, *Lindl.*
— hookeri, *Lindl.*
— bracteata, *Torr.*
— flava, *Gray.*
— hyperborea, *Lindl.*
— dilatata, *Lindl.*
— blephariglottis, *Lindl.*
— ciliaris, *Lindl.*
— psycodes, *Gray.*
— lacera, *Gray.*
— fimbriata, *Lindl.*
Arethusa bulbosa, *Linn.*
Pogonia ophioglossoides, *Nutt.*
— pendula, *Linn.*
— verticillata, *Nutt.*
Calopogon pulchellus, *R. Br.*
Spiranthes gracilis, *Bigel.*
— cernua, *L. C. Rich.*
— latifolia, *Torr.*
Goodyera pubescens, *R. Br.*
— repens, *R. Br.*
Listera cordata, *R. Br.*
Cypripedium parviflorum, *Salisb.*
— spectabile, *Salisb.*
— acaule, *Ait.*
— arietinum, *R. Br.*

HYPOXIDACEÆ.

Hypoxis erecta, *Linn.*

IRIDACEÆ.

Iris versicolor, *Linn.*
— virginica, *Linn.*
Sisyrinchium bermudiana.
var. 1. anceps, *Gr.*
var. 2. mucronatum, *Gr.*

DIOSCORACEÆ.

Dioscorea villosa, *Linn.*

SMILACEÆ.

Smilax rotundifolia, *Linn.*
— hispida, *Muhl.*
— spinulosa, *Smith.*
(*glauca*, Walt.?)
— herbacea, *Linn.*
Trillium erythrocarpum, *Michx.*
— cernuum, *Linn.*
— erectum, *Linn.*
— grandiflorum, *Salisb.*
Medeola virginica, *Linn.*

LILIACEÆ.

Asparagus officinalis, *Linn.*
Smilacina stellata, *Desf.*
— trifolia, *Desf.*
— racemosa, *Desf.*
— bifolia, *Schult.*
Polygonatum multiflorum, *Ait.*
Clintonia borealis, *Raf.*
— umbellata, *Torr.*
Ornithogalum umbellatum, *Linn.*
Allium canadense, *Kalm.*
— vineale, *Linn.*
— cernuum, *Roth.*
— tricoccum, *Ait.*
Lilium philadelphicum, *Linn.*
— canadense, *Linn.*
— superbum, *Linn.*
Erythronium americanum, *Smith.*
— albidum, *Nutt.*

MELANTHACEÆ.

Zygademus glaucus, *Nutt.*
Melanthium virginicum, *Linn.*
* — hybridum, *Walt.*
Veratrum viride, *Ait.*
Chamælirium luteum, *Gray.*

(*Helonias dioica*, Pursh.)
Uvularia perfoliata, *Linn.*
— grandiflora, *Smith.*
— sessilifolia, *Linn.*
Prosartes lanuginosa, *Don.*
Streptopus amplexifolius, *DC.*
— roseus, *Michx.*

JUNCACEÆ.

Luzula campestris, *DC.*
— pilosa, *Willd.*
— parviflora, *Desv.*
Juncus effusus, *Linn.*
— filiformis, *Linn.*
— balticus, *Willd.*
— nodosus, *Linn.*
— debilis, *Gray.*
(*nodosus*, var. *multiflorus*, Tor.)
— scirpoides, *Lam.*
(*polycephalus*, Michx., Tor. in part.)
— paradoxus, *E. Mey.*
(*polycephalus*, var. 2. *Torr.*)
— acuminatus, *Michx.*
— pelocarpus, *E. Mey.*
— conradi, *Tuckerm.*
— bufonius, *Linn.*
— stygius, *Linn.*
— trifidus, *Linn.*
— greenii, *Oakes & Tuckerm.*
— gerardi, *Loisel.*
— marginatus, *Rostk.*
— tenuis, *Willd.*

PONTEDERIACEÆ.

Pontederia cordata, *Linn.*
Heteranthera reniformis, *Ruiz & Pav.*
— graminea, *Vahl.*

COMMELYNACEÆ.

†Commelyna angustifolia, *Michx.*
Tradescantia virginica, *Linn.*

XYRIDACEÆ.

Xyris caroliniana, *Walt.*

ERIOCAULONACEÆ.

Eriocaulon septangulare, *With.*

CYPERACEÆ.

Cyperus flavescens, *Linn.*
— diandrus, *Torr.*
— nuttallii, *Torr.*
— inflexus, *Muhl.*
— michauxianus, *Schult.*
— strigosus, *Linn.*
— repens, *Ell.*
— filiculmis, *Vahl.*
— grayii, *Torr.*
— dentatus, *Torr.*
— schweinitzii, *Torr.*
— ovularis, *Torr.*
— retrofractus, *Torr.*
Dulichium spathaceum, *Pers.*
Fuirena squarrosa, *Michx.*
var. pumila, *Torr.*
Eleocharis palustris, *R. Br.*
— olivacea, *Torr.*
— rostellata, *Torr.*
— intermedia, *Schult.*
— obtusa, *Schult.*
— tuberculosa, *R. Br.*
— acicularis, *R. Br.*
— melanocarpa, *Torr.*
— tenuis, *Schult.*
— pygmæa, *Torr.*
Hemicarpha subsquarrosa, *Nees.*
(*Scirpus subsquarrosus*, Muhl.)
Scirpus planifolius, *Muhl.*
— subterminalis, *Torr.*
— cæspitosus, *Linn.*
— debilis, *Pursh.*
— triqueter, *Linn.*
— torreyi, *Olney.*
(*mucronatus*, Torr., *not of* Linn.)
— lacustris, *Linn.*
— maritimus, *Linn.*

Scirpus maritimus, *var.* fluviatilis, *Torr.*
— atrovirens, *Muhl.*
— brunneus, *Muhl.*
— eriophorum, *Michx.*
— lineatus, *Michx.*
Eriophorum alpinum, *Linn.*
— vaginatum, *Linn.*
— polystachyon, *Linn.*
— angustifolium, *Roth.*
Fimbristylis spadicea, *Vahl.*
Isolepis capillaris, *Ræm. & Schult.*
Trichelostylis mucronulata, *Torr.*
Rhynchospora alba, *Vahl.*
— capillacea, *Torr.*
— fusca, *Ræm. & Schult.*
— gracilenta, *Gray.*
— glomerata, *Vahl.*
— cephalantha, *Gray.*
Cladium mariscoides, *Torr.*
Scleria reticularis, *Michx.*
— laxa, *Torr.*
— triglomerata, *Michx.*
— pauciflora, *Muhl.*
— verticillata, *Muhl.*
Carex dioica, *Linn.*
— pauciflora, *Lightf.*
— polytrichoides, *Muhl.*
— willdenovii, *Schk.*
— steudelii, *Kth.*
— backii, *Boott.*
— bromoides, *Schk.*
— siccata, *Dew.*
— sartwellii, *Dew.*
— teretiuscula, *Good.*
* — paniculata, *Linn.*
— decomposita, *Muhl.*
— vulpinoidea, *Michx.*
— stipata, *Muhl.*
— alopecoidea, *Tuckerm.*
— sparganioides, *Muhl.*
— cephalophora, *Muhl.*
— muhlenbergii, *Schk.*

Carex rosea, *Schk.*
— retroflexa, *Muhl.*
— chordorhiza, *Ehrh.*
— gracilis, *Ehrh.*
(*disperma*, Dew.)
— trisperma, *Dew.*
— tenuiflora, *Wahl.*
— canescens, *Linn.*
— deweyana, *Schw.*
— stellulata, *Good.*
* — sychnocephala, *Carey.*
— scoparia, *Schk.*
var. lagopodioides, *Torr.*
— festucacea, *Schk.*
— straminea, *Schk.*
— rigida, *Good.*
* — torta, *Boott.*
— vulgaris, *Fries.*
(*cæspitosa*, Good. & Amer. auth. not of *Linn.*)
— stricta, *Lam.*
(*angustata*, Boott.)
— aquatilis, *Wahl.*
— crinita, *Lam.*
— limosa, *Linn.*
— buxbaumii, *Wahl.*
— aurea, *Nutt.*
— livida, *Willd.*
— tetanica, *Schk.*
— crawei, *Dew.*
— granularis, *Muhl.*
— pallescens, *Linn.*
— conoidea, *Schk.*
— grisea, *Wahl.*
(*laxiflora*, Schk., not of *Lam.*)
— davisii, *Torr. & Schw.*
— formosa, *Dew.*
— gracillima, *Schw.*
— virescens, *Muhl.*
— triceps, *Michx.*
— plantaginea, *Lam.*
— careyana, *Dew.*
* — retrocurva, *Dew.*
— digitalis, *Willd.*

Carex anceps, *Willd.*
— oligocarpa, *Schk.*
— eburnea, *Boott.*
— pedunculata, *Muhl.*
— umbellata, *Schk.*
— novæ-angliæ, *Schw.*
— pennsylvanica, *Lam.*
— pubescens, *Muhl.*
— miliacea, *Muhl.*
— scabrata, *Schw.*
— arctata, *Boott.*
— debilis, *Michx.*
— flexilis, *Rudge.*
— flava, *Linn.*
— œderi, *Ehrh.*
— filiformis, *Linn.*
— lanuginosa, *Michx.*
— vestita, *Willd.*
— halseyana, *Dew.*
(*striata*, Torr., not of Michx.)
— aristata, *R. Br.*
— striata, *Michx.*
(*trichocarpa*, Muhl.)
— pseudo-cyperus, *Linn.*
— hystricina, *Willd.*
— tentaculata, *Muhl.*
— intumescens, *Rudge.*
* — grayii, *Carey.*
— folliculata, *Linn.*
— subulata, *Michx.*
— lupulina, *Muhl.*
— squarrosa, *Linn.*
— retrorsa, *Schw.*
— schweinitzii, *Dew.*
— vesicaria, *Linn.*
— monila, *Tuckerm.*
— bullata, *Schk.*
— ampullacea, *Good.*
var. utriculata, *Carey.*
— cylindrica, *Schw.*
— oligosperma, *Michx.*
— longirostris, *Torr.*

GRAMINEÆ.

Leersia oryzoides, *Swartz.*
— virginica, *Willd.*
Zizamia aquatica, *Linn.*
Alopecurus pratensis, *Linn.*
— geniculatus, *Linn.*
var. aristulatus, *Torr.*
Phleum pratense, *Linn.*
Phalaris arundinacea, *Linn.*
— canariensis, *Linn.*
Holcus lanatus, *Linn.*
Hierochloa borealis, *Rœm. & Schult.*
— alpina, *Rœm. & Schult.*
Anthoxanthum odoratum, *Linn.*
Paspalum læve, *Michx.*
— setaceum, *Michx.*
Milium effusum, *Linn.*
Panicum sanguinale, *Linn.*
— glabrum, *Gaud.*
— filiforme, *Linn.*
— crus-galli, *Linn.*
— virgatum, *Linn.*
— latifolium, *Linn.*
— clandestinum, *Linn.*
— xanthophysum, *Gray.*
— capillare, *Linn.*
— depauperatum, *Muhl.*
— dichotomum, *Linn.*
— verrucosum, *Muhl.*
— agrostoides, *Spreng.*
— prolificum, *Lam.*
Pennisetum glaucum, *R. Br.*
— viride, *R. Br.*
Cenchrus tribuloides, *Linn.*
Oryzopsis asperifolium, *Michx.*
— melanocarpa, *Muhl.*
— canadensis, *Torr.*
Stipa avenacea, *Linn.*
Aristida dichotoma, *Michx.*
— gracilis, *Ell.*
Muhlenbergia diffusa, *Schreb.*
— willdenovii, *Trin.*
— sylvatica, *Torr. & Gr.*
— sobolifera, *Trin.*

Muhlenbergia glomerata, *Trin.*
— mexicana, *Trin.*
Cinna arundinacea, *Linn.*
Vilfa aspera, *Beauv.*
— vaginæflora, *Torr.*
— serotina, *Torr.*
— heterolepis, *Gray.*
— cryptandra, *Gray.*
Agrostis vulgaris, *With.*
— alba, *Linn.*
— scabra, *Willd.*
(*Trichodium laxiflorum*, Michx.)
— stricta, *Willd.*
— canina, *Linn.*
Brachyelytrum aristatum, *Beauv.*
Calamagrostis canadensis, *Beauv.*
— confinus, *Willd.*
(*inexpansa*, Gray.)
— coarctata, *Torr.*
Ammophila arundinacea, *Host.*
Phragmites communis, *Trin.*
Eleusine indica, *Gært.*
Spartina cynosuroides, *Willd.*
— juncea, *Willd.*
— alterniflora, *Lois.*
Bouteloua racemosa, *Lag.*
Aira flexuosa, *Linn.*
— atropurpurea, *Wahl.*
— cæspitosa, *Linn.*
Trisetum molle, *Kth.*
Avena pennsylvanica, *Linn.*
— striata, *Michx.*
Arrhenatherum avenaceum, *Beauv.*
Danthonia spicata, *Beauv.*
Tricuspis seslerioides, *Torr.*
Uralepis purpurea, *Nutt.*
var. aristulata.
(*U. aristulata*, Nutt.)
Poa annua, *Linn.*
— laxa, *Hænke.*
— trivialis, *Linn.*
— pratensis, *Linn.*
— compressa, *Linn.*
— pungens, *Nutt.*
Poa nemoralis, *Linn.*
— serotina, *Ehrh.*
— debilis, *Torr.*
— eragrostis, *Linn.*
— pilosa, *Linn.*
— reptans, *Michx.*
— hirsuta, *Michx.*
— capillaris, *Linn.*
— michauxii, *Kth.*
Glyceria fluitans, *R. Br.*
— acutiflora, *Torr.*
— aquatica, *Smith.*
— nervata, *Trin.*
— elongata, *Trin.*
— canadensis, *Trin.*
— pallida, *Trin.*
(*Poa dentata*, Torr.)
Dactylis glomerata, *Linn.*
Bromus secalinus, *Linn.*
— ciliatus, *Linn.*
— kalmii, *Gray.*
(*purgans*, Torr., not of *Linn.*)
— sterilis, *Linn.*
Kœleria pennsylvanica, *DC.*
— truncata, *Torr.*
Festuca duriuscula, *Linn.*
— tenella, *Willd.*
— nutans, *Willd.*
— elatior, *Linn.*
— pratensis, *Huds.*
Diplachne fascicularis, *Beauv.*
Uniola gracilis, *Michx.*
Lolium perenne, *Linn.*
Triticum repens, *Linn.*
— caninum, *Linn.*
Elymus virginicus, *Linn.*
— canadensis, *Linn.*
— villosus, *Muhl.*
— hystrix, *Linn.*
Andropogon nutans, *Linn.*
— scoparius, *Muhl.*
— furcatus, *Muhl.*
— virginicus, *Linn.*
— macrourus, *Michx.*

EQUISETACEÆ.

Equisetum arvense, *Linn.*
— sylvaticum, *Linn.*
— limosum, *Linn.*
— hyemale, *Linn.*
— variegatum, *Scleich.*
— scirpoides, *Michx.*

FILICES.

Polypodium vulgare, *Linn.*
— hexagonopterum, *Michx.*
— phegopteris, *Linn.*
— dryopteris, *Linn.*
Struthiopteris germanica, *Willd.*
Allosorus gracilis, *Presl.*
Pteris aquilina, *Linn.*
Platyloma atropurpurea, *I. Sm.*
Adiantum pedatum, *Linn.*
Doodia virginica, *Presl.*
Woodwardia angustifolia, *Smith.*
Scolopendrium officinarum, *Smith.*
Asplenium trichomanes, *Linn.*
— ebeneum, *Ait.*
— angustifolium, *Michx.*
— ruta-muraria, *Linn.*
— thelypterioides, *Michx.*
— filix-fœmina, *R. Br.*
Antigramma rhizophylla, *I. Sm.*
Aspidium marginale, *Swartz.*
— goldianum, *Hook.*
— cristatum, *Swartz.*
— dilatatum, *Swartz.*
— thelypteris, *Swartz.*
— noveboracense, *Willd.*
— acrostichoides, *Swartz.*
Onoclea sensibilis, *Linn.*
Woodsia ilvensis, *R. Br.*
— obtusa, *Torr.*
* — glabella, *R. Br.*
Cystopteris bulbifera, *Bernh.*
— fragilis, *Bernh.*
Dicksonia pilosiuscula, *Willd.*
Osmunda claytoniana, *Linn.*
— cinnamomea, *Linn.*
— spectabilis, *Willd.*
Lygodium palmatum, *Sw.*
Ophioglossum vulgatum, *Linn.*
Botrychium virginicum, *Swartz.*
— lunarioides, *Swartz.*
— simplex, *Hitchcock.*

LYCOPODIACEÆ.

Lycopodium selago.
— lucidulum, *Michx.*
— inundatum, *Linn.*
var. alopecuroides, *Tuckerm.*
— annotinum, *Linn.*
— obscurum, *Linn.*
— clavatum, *Linn.*
— complanatum, *Linn.*
Selaginella rupestris, *Spring.*
— apus, *Spring.*

SALVINACEÆ.

†Salvinia natans, *Willd.*
Azolla caroliniana, *Willd.*

ISOETACEÆ.

Isoëtes lacustris, *Linn.*

LIST

OF

MINERALS, GEOLOGICAL SPECIMENS AND FOSSILS,

ADDED TO THE COLLECTION DURING 1847 AND 1848;

WITH A

MEMORANDUM OF PROF. HALL, AS TO THE ADDITIONS MADE
TO THE PALÆONTOLOGICAL CABINET SINCE APRIL 11, 1848.

MINERALS.

1847.

ARRAGONITE? from Howe's Cave, Schoharie county. Presented by Mr. HOWE.

GYPSUM, from Cayuga county. Presented by Mr. ALLEN.

MAGNETIC IRON ORE, from Barton's mine, Moriah, Essex county. Presented by Mr. BARTON.

HYALITE, from Essex county. Presented by GEORGE W. LITTLE.

CALCAREOUS SPAR, from Essex county. Presented by G. W. LITTLE.

PETROLEUM in FAVOSITE, from Erie county. Presented by Mrs. ANGEL.

SCHORL (black), from Essex county. Presented by J. W. TAYLOR.

QUARTZ (crystallized), from Schoharie county. Presented by J. W. TAYLOR.

CALCAREOUS SPAR (3), from Rossie. Presented by J. W. TAYLOR.

1848.

IRON PYRITES, from Lewis, Essex county. Presented by JACOB SARGENT.

QUARTZ CRYSTAL, from Rensselaer county. Presented by GEORGE VAIL.

DOG-TOOTH SPAR, from Cheshire, Ontario county. Presented by ISRAEL PARSHALL.

BLUE CLAY, from Cheshire, Ontario county. Presented by I. PARSHALL.

SLATE containing IRON PYRITES, from Bainbridge, Chenango county. Presented by EZRA I. CHURCH.

CLAY containing RED OXIDE OF IRON, from Bainbridge, Chenango county. Presented by E. I. CHURCH.

QUARTZ, from Leyden, Lewis county. Presented by ASA FRANCIS.

CARBONATE OF LIME, in six-sided tables, obtained in blasting a tunnel for the Hudson Railroad, at Anthony's Nose.

This truly magnificent specimen, and almost unique, as the vein was extremely small, is presented by JOHN E. HENRY, Engineer on the above Road.

CARBONATE OF LIME (crystallized), from the same locality. Presented by PIERRE VAN CORTLANDT.

LIMONITE (hæmatite), 5 specimens, from Copake, Columbia county.

GEOLOGICAL, INCLUDING FOSSILS.

1847.

TRAP ROCK, from Essex county. Presented by GEORGE W. LITTLE.

CLAY CONCRETIONS, from Schoharie county. Presented by J. W. TAYLOR.

CAST OF ISOTELUS GIGAS, from Trenton falls. Presented by J. W. TAYLOR.

FAVOSITES GOTHLANDICA (the cells filled with petroleum), from Erie county*. Presented by Mrs. ANGEL.

ATRYPA LIMITARIS, from limestone above the Marcellus shales, from Springport, Cayuga county. Presented by Mr. ALLEN.

FAVOSITES GOTHLANDICA (cells partially open), from the Onondaga limestone. Presented by ISRAEL PARSHALL.

ORTHOCERAS? from limestone in the Marcellus shales, from Lenox, Madison county.

1848.

GRANITE, from Haverstraw, Rockland county. Presented by J. S. CONVERS.

MEMORANDUM.

SINCE the Catalogue of Fossils of the Lower Silurian Rocks, in the Collection of Palæontology, was completed, I have added three casts of species described in the first volume of the Palæontology of New-York :

1. A cast of *Lichas* (*Platynotus*) *trentonensis*.

   The original was found at Cincinnati, Ohio. Fragments of the same have been found in the Trenton limestone of New-York.

2. A cast of a very perfect specimen (young) of *Isotelus gigas*.

3. A cast of the spinous processes of the tail of *Ceraurus pleurexanthemus*.

   The original is of a very large individual, and very perfectly preserved.

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* Also noticed under the list of Minerals.

I have also added a cast of the skull and one lower jaw of the *Castoroides ohioensis*. The original was found near Clyde in Wayne county, N. Y.

In addition to the above, I have added to the collection in palæontology, from the Trenton limestone:

One new species of PALÆOPHYCUS.

An undescribed marine plant belonging to a new genus.

Two specimens of *Tellinomya nasuta*.

Several perfect specimens of *Tellinomya dubia*.

" perfect specimens of *Modiolopsis mytiloides*.

" good specimens of *Pleurotomaria lenticularis*.

" " " of *Bucania punctifrons*.

" " " of *Bucania tricarinata*.

" " " of *Cyrtolites compressus*.

Good specimens of *Holopea obliqua*.

A new species of the genus SUBULITES.

One or two new species of ENDOCERAS.

In all, fifty specimens have been added to those previously in the cases from the Trenton limestone. Besides these, several hundred specimens of different species have been obtained (from the same rock); but as they are not better than those previously in the collection, I have not placed them in the cases, and they remain packed in boxes for future disposition.

From the Clinton group some very interesting specimens have been obtained, showing the existence of sea beaches with the tracks or trails of marine animals upon the sand. At least one hundred specimens, containing fossils, have been added from this group. Among these are perfect specimens of the *Pentamerus oblongus*; several species of ATRYPA, and others which are undescribed. I may add, that the number of species of fossils in this group has been more than doubled by the collections made during the past season.

From the Niagara group, there have been added a considerable number of corals: at least twenty undescribed species have been added during the past summer. About twenty specimens of *Caryo-*

crinus ornatus; specimens of *Hypanthocrinus decorus; Ichthyocrinus lævis;* two species of STEPHANOCRINUS, and fragments of other species, have been collected. Among the BRACHIOPODA, about fifteen species have been added; of a large part of which, there are from ten to twenty specimens of each species. Among Trilobites, two specimens of *Lichas* (*Platynotus*) *boltoni*, several of *Phacops limulurus*, several of *Calymene niagarensis*, and one perfect specimen of *Bumastis barriensis*, have been added. When there are duplicates, the best specimens have been selected for the Cabinet, and the others remain packed, or in drawers, subject to further direction.

From the Pentamerus-galeatus limestone and Delthyris shaly limestone, a considerable number of good specimens have been added to the collection. These are chiefly of the BRACHIOPODA, of the genera *Lingula*, *Leptæna*, *Orthis*, *Delthyris* and *Atrypa*. A considerable number of Corals have likewise been added, but these are almost entirely of undescribed species. The same remark will apply to the greater part of all species from these rocks, and therefore no detailed catalogue of names can be given at the present time.

From the Onondaga-salt group, I have added several specimens of a large fossil shell allied to the MEGALODON, being the only fossil shell of this character yet known in our Silurian beds. A new species of *Pentamerus*, two of *Murchisonia*, and one or two of *Pleurotomaria* have been added from the same group. The occurrence of these fossils is very interesting, inasmuch as this group is nearly destitute of fossils throughout the State, with the exception of a single locality.

A large number of specimens have been collected from the Onondaga and Corniferous limestones. These are mostly of undescribed species; and I have had no time to unpack the boxes, and can only report them as ready for arrangement and description.

A complete catalogue of the fossils and geological specimens of the Medina sandstone, Clinton group, Niagara group and Onondaga Salt group, will be furnished to the Regents for the next Report.

JAMES HALL.

CATALOGUE

OF THE

HISTORICAL AND ANTIQUARIAN COLLECTION,

IN THE

STATE CABINET OF NATURAL HISTORY.

HISTORICAL AND ANTIQUARIAN COLLECTION.

1847.

FROM JOHN F. JENKINS, OF NORTH-SALEM, WESTCHESTER CO.

A Map of the Town of North-Salem, on rollers. Executed by the Donor.

1848.

FROM WILLIAM CASE, OF CANANDAIGUA.

Indian pipe, found four miles south of the village of Canandaigua.

FROM JOHN M'GILLIS, OF ST. JOHNS, CANADA EAST.

Remains of the Gate Posts of Fort William Henry, at the head of Lake George. The fort was erected in 1755, and taken and destroyed by Montcalm in 1756. The posts (of cedar) were dug up in 1837, by the direction of William Caldwell, the owner of the ground, and have to this time been preserved in his office.

FROM THE BOARD OF MANAGERS OF THE WASHINGTON NATIONAL MONUMENT.

A piece of marble (from Maryland), of the corner stone of the Washington National Monument, laid July 4, 1848. Presented by them to the State of New-York.

FROM T. ROMEYN BECK.

Indian arrow-head (hornstone), found at Lake George.

FROM EDWIN CROSWELL.

Copper Mexican bomb shell, taken from the battle ground of Buena Vista, by Lieut. Easterly, U. S. Army.

Copper Mexican grape shot, taken from the battle ground of Buena Vista, by Lieut. Easterly, U. S. Army.

Cannon ball, found in excavating in front of the site of the ancient Fort Orange, Albany.

FROM LEWIS H. MORGAN, OF ROCHESTER.

1. *Ga-né-ga-tah* (STONE MORTAR), used by the Senecas for pounding corn, pulverizing roots, etc. Sandstone. Found near Allen's Hill, Ontario county, May 9, 1843.
2. STONE PESTLE, found at Jack's Reef, Onondaga county.
3. STONE PESTLE, found in the town of Middlebury, Wyoming co.
4. STONE CHISEL, from Groveland Livingston county.
5. STONE CHISEL. Fort Hill, town of Seneca, Ontario county.
6. STONE CHISEL. Town of Coventry, Genesee county.
7. STONE CHISEL. Ontario county.
8. STONE CHISEL, used for chipping out coal. Fort Hill, town of Seneca, Ontario county.
9. STONE CHISEL, from Auburn, Ontario county.
10. STONE CHISEL. Used by the Iroquois in felling trees. Fire was applied near the root of the tree, and the chisel was used to cut out the coal; after which, fire was again applied. The chisel and fire were also used to hollow out wooden vessels. From Tonawanda, Genesee county.
11. STONE CHISEL. From the town of Coventry, Genesee county.
12. STONE CHISEL. From Mendon, Monroe county.
13. STONE CHISEL. From Allen's Hill, Ontario county.
14. STONE CHISEL. From Mendon, Monroe county.
15. STONE CHISEL. From Coventry, Genesee county.
16. STONE GOUGE. Found near Leroy, Genesee county.
17. SPEAR-HEAD (chert). Found at Fort Hill, Seneca, Ontario county.
18. ARROW-HEAD. Town of Seneca, Ontario county.
19. ARROW-HEAD. Town of Chili, Monroe county.
20. ARROW-HEAD. Fort Hill, Ontario county.
21. INDIAN KNIFE (chert), used for skinning deer. Found near Avon at the site of Little Beard's town, Livingston county.
22. TOMAHAWK, found by the skeleton of an Indian, near Lima, Livingston county.
23. TOMAHAWK, found by the skeleton of an Indian at Mendon, Monroe county.
24. TOMAHAWK. Town of Lima, Livingston county.
25. TOMAHAWK. Town of Ledyard, Cayuga county.

26. Brass kettle, taken from an Indian grave at the site of the old Indian village of Gá-nun-da-sa-ga, near Geneva, 1840.

27. Part of a Gun lock and Rifle barrel found by the skeleton of an Indian, in the town of Mendon, Monroe county.

28. Head of a *Ga-ne-ah* or War club, fastened into the head of a club by a thong or withe. Ledyard, Cayuga county.

29. *Yuh-tah-gun-he-a-tah.* *Geh-weh*, or Moccasin needle (bone of the deer). Used by the "Mound Builders," and also by the Iroquois. Found at Fort Hill, near Leroy, N. Y.

30. Stone tube (of variegated limestone). Town of Springpor', Cayuga county. A relic of the "Mound Builders," and not of the Iroquois. Similar tubes, some of which are fifteen inches in length, are found in the Ohio mounds.

31. Stone amulet. Tonawanda, Genesee county.

32. Indian necklace of teeth, found near the skeleton of an Indian. Genesee valley, near Avon, Livingston county.

33. *A-so-gwa-ta*, or Clay pipe, from Aurora, Cayuga county.

34. Front part of the bowl of a pipe (similar to those found in the Ohio mounds). Lima, Livingston county.

35. Fragment of *Ga-jeh*, or Earthen basin. Fort Hill, near Leroy, Genesee county; with a tooth found in the same place.

36. Pottery, affected by water. Fort Hill.

37. *Gus-to-weh.* Head dress. Seneca — Iroquois.

38. *Ga-neah*, or War club. A species used in the War Dance. Seneca — Iroquois.

39. Indian calumet. From the West (imperfect).

40. Leaden cross. Found near the Tonawanda Council House, Genesee county, October, 1845.

41. Fragment of the tombstone of Redjacket, found upon his grave, four miles from Buffalo. The stone is mutilated by travellers.

42. Fragment (slag?) taken from the fireplace of the old picket enclosure of Kon-non-da-sa-sa, at the foot of the Genesee lake, in 1845. This picket was destroyed by General Sullivan.

43. Stub of the palisade at the gate or opening of the above picket enclosure. Found November 21, 1845.

ADDITIONAL DONATIONS RECEIVED FROM MR. MORGAN,

DECEMBER 8, 1848.

44. FRAGMENT of an INDIAN PIPE. Monroe county.

45. *A-se-qua-tah*, or CLAY PIPE, taken from a Seneca burial place near Lima, Livingston county, 1848.

46. ARROW-HEAD. Mendon, Monroe county.

47. ARROW-HEAD. Mendon, Monroe county.

48. ARROW-HEAD of COPPER. Bend of the Honeoye creek, Monroe co.

49. PART of a GUN-BARREL, from an Indian burying ground, Ball farm, Monroe county.

BY PURCHASE OF WILLIAM H. C. HOSMER, OF AVON (LIVINGSTON COUNTY).

1. INDIAN ARROW-HEADS (6), picked up in ploughed fields in the vicinity of Avon.

2. INDIAN ARROW-HEADS of small size, used by Indian boys in killing birds and inferior game (9). These arrows were inserted into the split end of tough wooden shafts, and fastened at the notches with ligatures of sinew or string bark.

3. INDIAN ARROW-HEADS (4), found on a plain near Fort Niagara, and of greater antiquity than those of flint formation.

4. INDIAN ARROW-HEADS (2), found on the farm of Timothy Hosmer, in the town of Porter, Niagara county, near the Lake shore; one of them curiously twisted.

5. A HATCHET-SHAPED FLINT, obtained from Col. Jewett of Lockport.

6. BROKEN ARROW-HEADS.

7. STONE DEERSKIN-DRESSERS, found on the farm of Mr. Hurlburt, in the northeast part of the town of Avon.

8. STONE DEERSKIN-DRESSER, found on the farm of Jeptha Wilber, Avon.

9. STONE DEERSKIN-DRESSER, found on the farm of James Wadsworth, near Borley's mill in the bend of the Conesus outlet, town of Livonia, Livingston county. The place where they were found was called "Fort Hill" by the early settlers; and mound, trench and gateway were visible in the memory of men now living.

10. STONE PESTLE, used in pounding maize; found on the farm of J. Wilber, Avon.

11. Ancient stone hatchet of rude construction, found on the site of the old village of Cannewangus (stinking waters), so called from its vicinity to the Mineral springs of Avon. After De Nonville's invasion, the Indians removed to the west side of the Genesee.

12. Ancient stone pipe-bowls (2), found in Rush, Monroe county.

13. Ancient stone pipe-bowls, found near Fort Hill. I have never met with ruder specimens (W. H. C. H.).

14. Clay pipe-stems, found in the vicinity of Avon.

15. Clay pipe-stems, found in Mendon, Monroe county, near the site of the village known in the 17th century to the French, as "Dyen-de-haak-doh," or the Bend; having been situated in an arm of the Hone-yah-yah (called by the Whites, Honeoye), or the place where the finger was left. The tradition is, that an Indian, while gathering strawberries on its banks, was bitten by a copperhead on one of his fingers; and that to prevent a spread of the venom, he severed it from his hand with a hatchet.

16. Fragments of ancient pottery, picked up at various points in the Valley of the Genesee.

17. Ancient pottery found by me, together with a paint stone, in a mound of the Yemassees, near the ocean beach at San Pablo, on St. John's River, Florida. I send it, that a comparison may be instituted between the handiwork of the Northern and Southern tribes.

18. Steel hatchet, found on the Wilber farm (Avon), in an old grave.

19. Bones, etc. taken from an Indian grave near Fort Niagara.

20. Sword-belt plate, found near Cannewangus landing, by a workman on the Canal, many feet below the surface; together with human bones, and a fragment of a military coat that crumbled on exposure to the air. It is perforated by a bullet. It bears the inscription, "104, New-Brunswick Regiment," surmounted by the English crown. Some luckless British soldier, taken in some distant expedition of the conquering Iroquois, may have been the victim of Indian warfare.

21. Stone implements, found on the farm of William Wadsworth near Fowlerville bridge, York, Livingston county.

22. Paint stone referred to in No. 17. The bottom of the stone, when discovered, was red with vermilion or some of the coloring matters.

23. **Leaden cross**, of Maltese shape, referring to missions of the Jesuits; and a bone rifle charger, found in a field that is known in song as "The Place of Bones." This field lies at the foot of a wooded ridge, in view of the village of Avon, and is supposed by Colonel Stone and myself to have been the scene of conflict between De Nonville and the Senecas, though my friend O. H. Marshall is of a different opinion.

A few years since, I was in possession of a skull picked up on the battle ground, with a bullet hole through the os frontis. My father, when the ground was first ploughed, picked up a dagger with the arms of Louis XIV stamped on the finely wrought blade. It remained in his possession many years, and then was either stolen or lost.

24. **French axes**, found at an old Jesuit station on the Mendon road.

25. **French axes**, found on the site of a village near the dividing line between Avon and Lima, supposed by O. H. Marshall and myself to have been a famous town known to the Jesuits in the 17th century as Dyiu-don-sot, or village at the spring. Presented to me by O. H. M.

26. **Decoy fish**, used by the Saginaw Indians, Michigan, in winter. They drop the decoy through the holes cut in the ice, to entice the trout from his watery lair below. As he approaches the surface, the expert spearman on the watch easily secures the prize.

27. **Fragments of fire-arms**, picked up on the supposed battle ground of De Nonville.

28. **Cannon ball** found by workmen, while building a bridge at Littleville, across the Conesus, four or five feet below the bed of the stream.

29. **Teeth of animals**, etc. found in an Indian burial place near the banks of the Genesee.

30. **Large arrow-head** and **stone deerskin-dresser**, found on the farm of F. M. Cutler, in a field south of Gore brook, Avon, bound with bark cord of Indian manufacture.

31. **Heavy bar of lead**, stamp still visible; knife point; fragment of a skull; stone deerskin-dresser, and fragments of brazen implements, found in graves in a sidehill on the farm of Richard Wilber, Avon. A bone cross, to use his expression, "lined and specked," was also found, but either lost or stolen. Below the depth penetrated by the ploughshare, ashes, charcoal, and charred kernels of maize are discovered in this

hill of burial. The cross would indicate that it was formerly a Jesuit station. Next spring, the field, now a stubble, will be ploughed, and I shall spend two or three days in investigating the antiquities of the place.

32. Beads of red pipe stone; bone elegantly polished; glass; variegated shell, and brass and copper, found at different points of Indian occupancy in the Genesee valley.

33. A section of a circle, perforated near the rim with holes; fragment of some unknown implement of red pipe stone, neatly cut and polished; and a *large bead* with a human head on one side of it, delicately carved and exquisitely proportioned: found in the old burial place of Cannewangus—that part of it now embraced by the highway leading from Albany to Buffalo, and disinterred by the plow, together with two skeletons, by two men repairing the road.

Communications from Lewis H. Morgan, Esq. of Rochester.

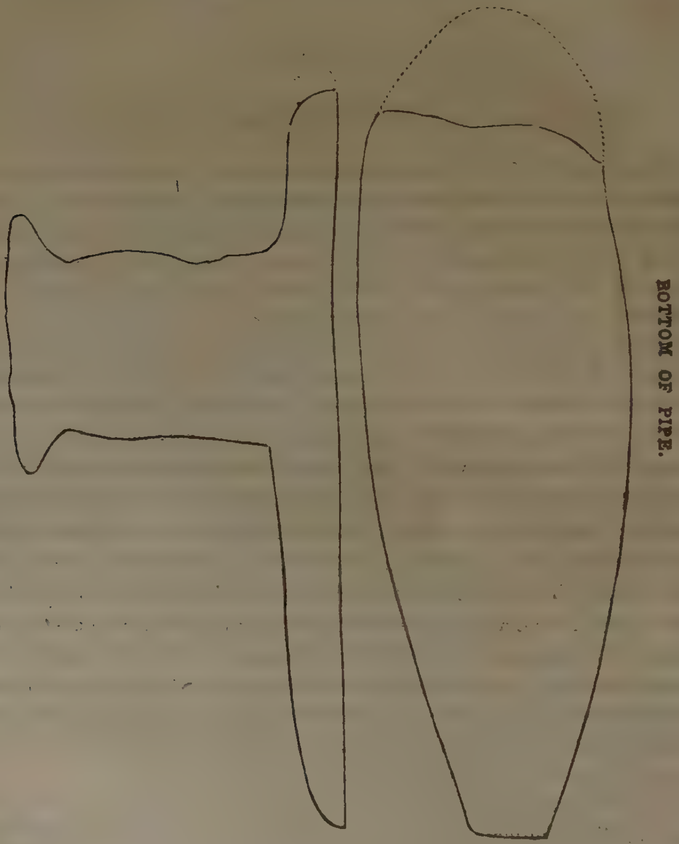
I.

EXTRACT OF A LETTER DATED OCTOBER 31, 1848.

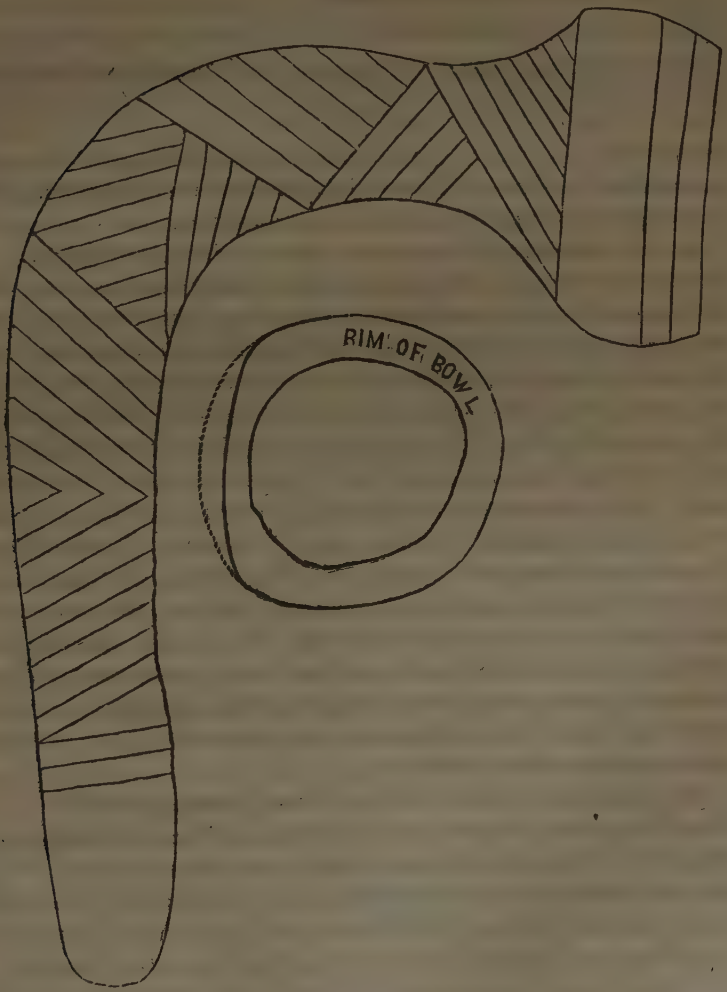
"The vestiges of our Indian predecessors are very limited, and the utmost efforts of a single person would accumulate but a small cabinet. Numerous individuals in the State, however, have fugitive specimens, which singly have no particular interest, but which if accumulated would become valuable. There is every reason to believe that most of these would be cheerfully surrendered to a general cabinet, such as the Board of Regents propose to found under the patronage of the State, as an adjunct to that of Natural History. Such a collection, in the course of time, would enlarge into a respectable and interesting cabinet, and in after years would assume a deeply attractive character. If the specimens in our museums and private cabinets were at once brought into one collection, they would excite universal surprise by their variety and singularity. Such a cabinet would, it is true, contain but little to instruct; would seem to enlarge but slightly the bounds of human knowledge, yet it would be all it pretended — a memento of the Red Race who preceded us. If the scholar of after years should ask of our age an account of our predecessors, such a collection would be the most acceptable answer it could render. It would enable the Red Race to speak for itself through these silent memorials. As a private citizen, I feel personally indebted to the Board for taking this enterprise under their protection and patronage, and will not only willingly contribute what little I have, to promote the object, but will aid, so far as I may be able, in other ways.

"Allow me to suggest that W. H. C. Hosmer, of Avon, Livingston county, has a small collection. Perhaps, if applied to, he would be willing to place it at the disposal of the Regents. J. V. H. Clark, Esq. of Manlius, Onondaga county, has devoted considerable attention to Indian matters, and I presume has some specimens. Charles P. Avery, of Owego, Judge of the county, has some Indian relics. Mr. Atwell, of Lima, Livingston county, has a pipe of black pottery, very large and perfect. It is the most perfect specimen of Indian pottery I have ever seen. Dr. Francis Moore, of Livingston county, now a resident of this city, has a stone or marble pipe of singular workmanship. I enclose drawings of these two pipes, which I made when I saw them in 1846. Dr. Sprague, of Pavilion, Genesee county, has also a stone vessel of singular design."

PIPE OF BLACK MARBLE (actual size), owned by Dr. MOORE. Found near Mount Morris, Livingston county, beside the skeleton of an Indian, in excavating for the Canal.



Indian pipe of black earthen (actual size), taken from an Indian grave near Lima, Livingston county: now in possession of Mr. **Atwell.** In hardness it resembles stone.



II.

To the Honorable the Board of Regents of the University of the State of New-York.

THE undersigned submits, with the specimens of Indian Art, herewith presented to the State "Historical and Antiquarian Collection," the following Report upon their names and localities:

But few remains of the skill and industry of our predecessors have come down to us, to illustrate the era of Indian occupation. The low state of the most useful arts among them detracts greatly from the interest with which the scanty vestiges of their civilization would otherwise be invested. Such specimens as we discover are rude to the last degree in their construction, and bespeak a social condition of extreme simplicity. Still there is no condition of man, however rude, in which he is not surrounded by mementoes of his handywork. The possession of the thinking principle, and of the human form, render existence without work impossible. Artificial contrivances are inseparable from the social state; and when these specimens of human ingenuity are brought together, they unlock the social history of the people from whom they come. In this view especially, the artificial remains of our Indian predecessors, inconsiderable as they are in every ordinary sense, possess an intrinsic value, and should be sought out and preserved as the unwritten history of their social existence.

The establishment of an Indian Cabinet, under the shadow of the State Geological Collection, is by no means a barren or unpromising enterprise. There is not in our Republic an Indian Collection which fully and fairly illustrates the condition of the arts among our Indian races. It is much clearer that there should be such a Cabinet, than that it can be collected; and as to the feasibility of the enterprise, it is at least worthy of the effort. The fugitive specimens are sufficiently numerous for a respectable foundation, and new relics will be constantly exhumed for centuries to come.

The remains of Indian art which are found scattered over, and entombed within, the soil of New-York, are of two distinct kinds, and to be ascribed to widely different periods. The first class belong to the Ante-Columbian period, as it is denominated by Indian scholars;

or the era of the "Mound Builders," whose defensive works, mounds, and sacred enclosures are scattered so profusely throughout the West, especially in the State of Ohio, in which they have their fullest development. The remains of this period indicate a semi-civilization of the most imposing character, and also a considerable development of the art of agriculture. Exclusive of the mounds and enclosures, they have left implements of copper and chert, of stone, porphyry and earthen, some of which are elaborately and ingeniously wrought. We have in various parts of our State many trench enclosures, or Fort Hills, as they are popularly called, which belong to the same era, and to the same system of works as those constructed by the "Mound Builders" of Ohio and the Mississippi valley. Within these enclosures, and in their immediate vicinity, artificial remains are always discovered.

With the second period, we may in our State connect the name of the Iroquois. It will also include the remains of the fugitive races, who, since the extermination of the "Mound Builders," have displaced each other in succession until the period of the Iroquois commenced. The remains of this last period are extremely rude, and in themselves barren of interest; but as they stand connected with the Iroquois, and illustrate their social condition, they become more attractive. We have reason to regard the Iroquois as the highest exemplification of the Red Man upon the Continent (except the Aztec race of Mexico), so far as we have positive knowledge. We stand with them in many interesting relations. With them terminated the jurisdiction of the Indian over New-York. They were our immediate predecessors in the territory, throughout its entire extent from the Hudson to Niagara, and from the St. Lawrence to the Chemung. We still speak their dialects in our geographical names. Their government and institutions were more accurately defined and systematic than those of any other Indian race. Under the League, they acquired a supremacy over cotemporary nations, and produced a class of chiefs and warriors, which together have lifted the Iroquois into a renown which no other Indian race in our Republic ever attained. What memento of this race, whose "Long House" was overthrown to make room for our own political structure, has the State preserved? Where are the visible memorials of their existence and of their occupation?

The present time which the Regents of the University have selected to lay the foundation of such an Indian Collection, is a most fortunate one. Within the past few years the Cabinet of Natural History has been founded, and has grown by natural enlargement into a great public attraction. An Indian Collection would be an interesting wing to the former; and in process of time, the two together may not be unworthy of comparison with the more universal collections of the National Government at the Patent Office. Governments owe it to themselves, and to succeeding generations, to make these collections; and there is no good reason why our own favored State should fail in her duty in this respect.

Without any further observations, which had perhaps better have been omitted, a few explanations will be made upon the names and localities of the specimens which accompany this report.

The "Stone Mortar," called in the dialect of the Senecas, a *Ga-ne-ga-ta*, is an Iroquois vessel; and was used for pounding corn, for pulverizing roots, barks, etc. for medicines, and for grinding mineral paint or red clay. Such are the uses for which, the Senecas affirm, the Stone Mortar was employed. It was found near Allen's Hill in the county of Ontario, upon the farm of John C. Mather. The entire stone, which would weigh over 200 pounds, was buried in the ground even with the upper surface, and upon the shady side of an oak. On raising it from the ground, four cavities were found upon the lower surface, much deeper than those upon the upper face, and worn into each other on the sides. As it was impossible to transport so large a stone, it was broken into two parts horizontally, and the upper part selected for preservation, it being the one last in use, and just as it was abandoned by the Senecas. This is the part which is presented. That it had been used for many years, is evident from the fact that it was literally worn out upon the lower face. The stone is the red and green sandstone of the Genesee.

The "Stone Pestle" was found on the Seneca river in the county of Onondaga, at a place called the Reef. Pestles of this description are found very frequently in various parts of the State; from which it is probable that wooden mortars were generally used for the same purposes, the stone mortar rarely ever being found. It may be well to add that the wooden mortar is still in use for pounding corn, among the Senecas and Cayugas, in the western part of the State. They never resort to the mills of the white people, but each family has its wooden mortar. It is simply a cylinder of wood about a foot and a half in diameter, and three feet in length. In one end is formed a cavity of sufficient capacity to hold a peck of corn, in which, after being hulled, the corn is reduced to flour by wooden pounders about five feet in length.

There is also a smaller stone pestle, octagonal in shape, which was found in the county of Wyoming. It was in the use of a wagon-maker, for grinding paint.

The Stone Chisel, *Uh-ga-o-gwat-ha*, is an Iroquois implement, and was used for cutting trees. Fire was applied at the foot of the tree, and the Stone Chisel was then used to cut out the coal. By a repetition of this process, trees were felled and cut to pieces. Wooden vessels were also hollowed out by the same means, as the fire and the chisel were together their only substitute for the axe. The Stone Chisel is found in all parts of the State, and in great numbers. It will be noticed that among the specimens furnished there are two kinds, one of which have plane faces, but this peculiarity affords no indication of the special uses for which they were designed. This implement was probably unknown to the "Mound Builders," as it is not found in their works.

The Stone Gouge is a different implement from the Chisel, but appears to have been designed for similar uses. Being convex upon one side, concave upon the other, and of greater length than the chisel, it is better adapted for hollowing out wooden vessels, and for giving to the basin thus formed a regular concavity. This specimen was found near Leroy, in the county of Genesee.

Arrow Heads are so common from Maine to Oregon, that it is scarcely necessary to refer to the specimens furnished. One of them is fashioned to revolve, on the same principle as the *twist* in the rifle barrel. It is well known that Indian arrows are feathered at the small end for the same purpose. It is not uncommon in Western New-York to find the places where these arrow heads were manufactured, which is indicated by the fragments of chert which lay about in heaps. As the arrow heads are made by cleavage, it could easily be done without metallic instruments. They are found in the mounds of the west in large quantities, which sufficiently establishes the great antiquity of the art.

If we did not know that the Iroquois never used the Spear (they have no word in their dialects for spear), it would be reasonable to infer that the large specimen was a Spear Head. Its size and weight preclude the idea that it was designed for an arrow. In the Ohio mounds, rows of similar chert heads have been found lying side by side like teeth, the row being about two feet long. This has suggested the idea that they were set in a frame, and fastened with thongs, thus making a species of sword or war club.

Knives of chert were also used by the Iroquois for skinning deer and other animals. The accompanying specimen was found near the site of *De-o-nun-da-ga-a*, or Little Beards Town, in the valley of Genesee, Livingston county.

Among the Iroquois, as all other Indian races, the custom of burying with the dead certain articles which their mythology prescribed, has been the means of preserving nearly all that remains of

Indian art. The mythology of the Iroquois taught that it was a journey of ten days from earth to heaven after death. They consequently buried with the dead, guns, tomahawks, bows and arrows, pipes, brass and earthen vessels containing corn, venison, etc.; and in general all the valuables of the deceased, as they would be needed for the journey. Similar customs appear to have prevailed throughout the whole Indian Family. Among the specimens furnished are several which were found beside the skeletons of Indians. Three of the four iron tomahawks were found buried in this manner. The brass kettle was taken from an Indian grave at the site of the old Indian village of *Ga-nun-da-sa-ga*, near Geneva, which was destroyed by General Sullivan in September 1779. It was thrown out by the ploughshare five years since, after having lain in the earth at least half a century. The gun lock, and portion of a rifle barrel, were also found beside the skeleton of an Indian in Mendon, Monroe county; the skeleton being in a sitting posture, with the gun barrel against the shoulder.

One specimen of an oval stone, with a groove around its greatest length, is furnished. Stones of this description were set in the heads of war-clubs by means of thongs, and thus made formidable weapons.

Perhaps the most singular relic in this little collection is the Moccason Needle. It was found at Fort Hill near Leroy in the county of Genesee, beside a skeleton very much decayed. The bone is from the deer, and taken near the fort. Similar bones are found in the Ohio mounds. The Iroquois used the same bone of the deer, and for the same purpose. In fact it is from the known use to which the Iroquois put this bone, that we infer that the Mound Builders used it for similar purposes, and we thus establish an identity of art between them in moccason making. Of the people who constructed the trench enclosures upon the hill tops in our State, we know nothing. Their works, although inferior in magnitude and different in style from the embankments and enclosures of the West, are nevertheless possessed of the same general features; and there is every reason to believe that they are the remains of the same people who built the mounds. The Iroquois know nothing of these trench enclosures. They disdain all connection with them, and all knowledge of their objects. Not even a tradition have they preserved concerning them. When the area within these enclosures is turned with the plow, fragments of pottery, of shells, and of human bones are found mingled with the soil; and not unfrequently stone pipes of singular design, implements, and ornaments are thus brought again into light. The Moccason Needle in question was found in this way. When this Fort Hill was first visited by the white man, trees were found growing on the embankment, the grains of which indicated from three to four hundred years. If, then, this bone needle was buried by those who made the work, it would give to it an antiquity of several hundred years.

The "Stone Tube" of variegated limestone is also a singular relic, and belongs likewise to the Ante-Columbian period. Similar tubes, and of the same limestone, some of which are twelve or fourteen inches in length, have been found in the mounds of the West. The bore lessening in diameter, until it became at the neck about an eighth of an inch; the neck itself being flattened down into a sort of mouth piece. In what manner these tubes were bored, becomes an interesting inquiry. Specimens have been found partially bored, the work having been left unfinished; in which cases the end of the bore terminated with a cone having its apex towards the mouth. This has led to the supposition that it was done with sand, and a reed made to revolve. To what use this singular implement was applied, it is impossible to say. It may have been a mere personal ornament. The specimen in question was found in the town of Springport, Cayuga county.

Of the same character, in some respects, is the Amulet of Stone, or whatever it may be called. It was evidently bored in the same manner, and belongs to the same period. This was found at Tonawanda, Genesee county, and was given to the writer by an Indian.

The Necklace of teeth was discovered by the side of a skeleton near Avon, Livingston county, in excavating for the Genesee Valley Canal. It is doubtless an Iroquois ornament.

There is a great difference in the pottery, fragments of which are found in all parts of the State. Some of it is coarse, and rudely manufactured like the clay pipe from Aurora, Cayuga county; while other specimens are not only of a harder and firmer texture, but are worked with considerable taste and skill, like the fragment of the bowl of a pipe, painted with a wolf's head. This last was found near Lima, Livingston county. Whether this black pottery belongs to the Iroquois period, is a matter of great doubt. It seems to be superior to any pottery, which we can with certainty ascribe to them. One of the two other specimens from Fort Hill near Leroy, is probably spurious; but this is not certain.

In connection with these specimens are furnished a head dress, a light war club used in the dance, and a Calumet. The *Gus-to-weh*, or Head Dress, is a simple frame of splint, surmounted with a revolving feather, inclining backward from the head. This revolving feather is the peculiar feature, and the characteristic of the Iroquois head dress. The specimen presented is not well preserved, or a fair representative, but it has done service in the Council House of the Senecas at Tonawanda. To this belongs the *Ga-neah*, or War Club, which is a light article, fashioned after modern notions, and designed to use in the war dance. This is also from Tonawanda. As to the part of a calumet, it is from the West. The bowl was of a soft red stone called Calimite, and inlaid with lead. It is lost.

It would be an easy matter to obtain full Iroquois costumes, male and female, together with the implements, weapons and utensils in common use among them. When collected, they would richly repay the cost and trouble. The birch bark canoe, the bow and arrow, tomahawk, belt, turtle-shell rattle, drum, wampum, war club, ball club, snow snake, and all other articles of this description should have a place in the "Historical and Antiquarian Collection" of the State.

This concludes all that need be said concerning the few specimens which are now placed at the disposal of the Board. The number is large enough to awaken a little curiosity, but too small to be of much importance by themselves

While reflecting upon the project of the Regents of the University to found an Indian Cabinet for the State — an enterprise which no State in the Union has ever undertaken — the importance and seasonableness of the measure become more and more apparent. If a vigorous movement is now made to secure a small foundation to build upon, the collection would soon come into notice, and acquire sufficient vitality to secure to it a natural growth. It may not be improper to suggest, with reference to this project, that Doctor BEAUREAU, of Gallipolis in Ohio, is understood to have an Indian Collection consisting of about 1500 specimens, many of which, however, are duplicates, which can be purchased for $200 or $300. They belong principally to the period of the "Mound Builders," and would therefore furnish a very appropriate commencement to an Indian Collection in our own State, as our own aboriginal remains reach back to that period, or have their commencement in it. With that collection, and such scattering specimens as can be brought together from various parts of our State by private contribution, our State Collection would at once be placed in advance of all others in the country.

It occurred to the writer, when he received the resolutions of the Regents, to make a brief report on the Trench Enclosures, or Fort Hills in Western New-York; for the purpose of calling their attention to the importance of having them surveyed, before the residue are effaced by the plow. Several drawings or ground plans were accordingly prepared from surveys made personally a few years since;

and five or six are sent herewith, to show the general character of these works. A singular coincidence has made it unnecessary to say much upon the subject. But ten days since, and after these drawings were prepared, Mr. E. G. Squier passed though our city, for the express purpose of surveying these mounds and enclosures under the auspices of the New-York Historical Society. When it is remembered that Mr. S. is one of the authors of the work on the Ancient Monuments of the Mississippi valley, &c., published by the Smithsonian Institute, we may rest satisfied that the long neglected subject will be thoroughly explored; and we may also expect that a new interest will be awakened throughout the State, in the subject of our aboriginal remains.

It is only necessary to add, with reference to these drawings, that the first of them, the Palisade Fortification of which a ground plan is given, is a Seneca work. The bastions indicate that it was made with the aid of the English or French. This work was destroyed by General Sullivan in 1779, during his destructive inroad into the Seneca country. The stub of the palisade at the gate or opening was still above ground at the end of the trench. It was preserved by the writer when he made the survey, and accompanies the other specimens. The remaining drawings are of works which reach beyond the Iroquois period, and testify to the ancient occupation of a race, whose name we know not : neither know we the era of their departure. But this report is increasing beyond its intended, as well as its proper limits, and must be abruptly concluded.

All which is respectfully submitted.

L. H. MORGAN.

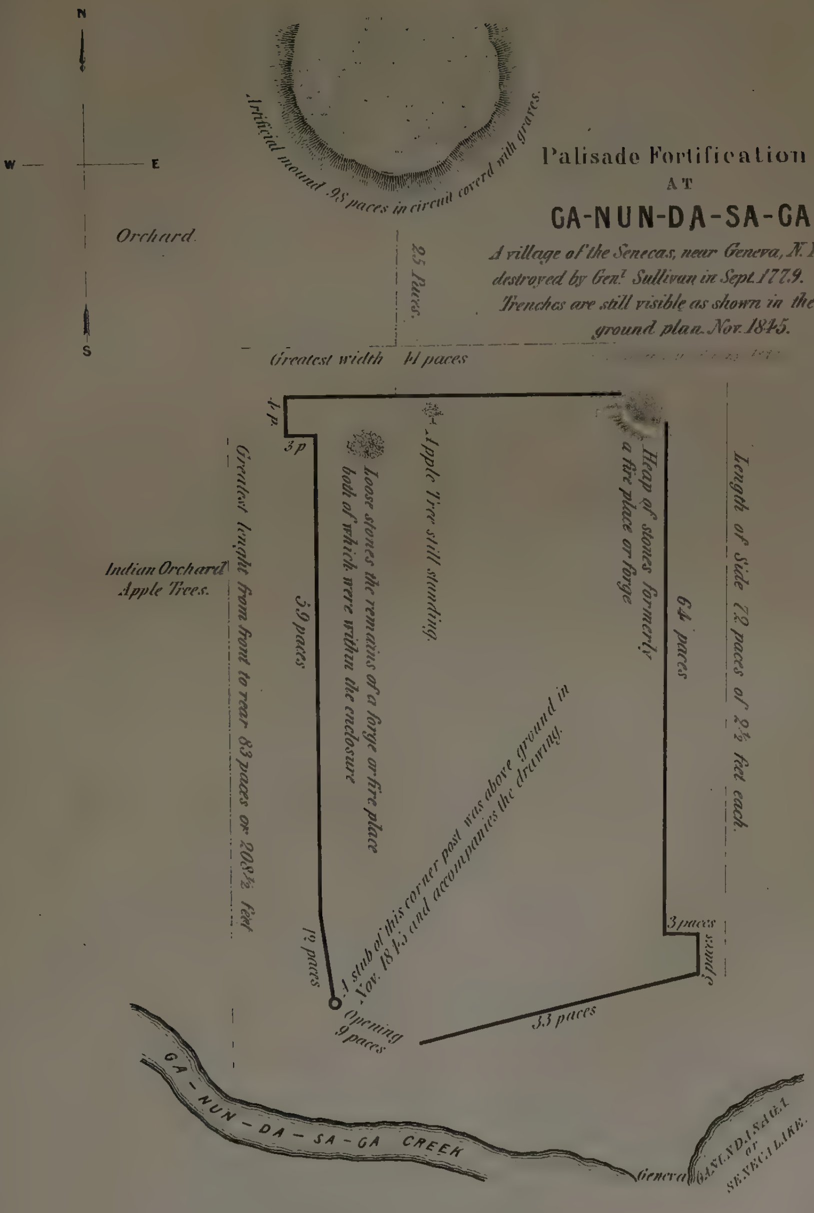
Rochester, November 13, 1848.

GROUND-PLANS AND DIMENSIONS

OF SEVERAL

TRENCH ENCLOSURES IN WESTERN NEW-YORK,

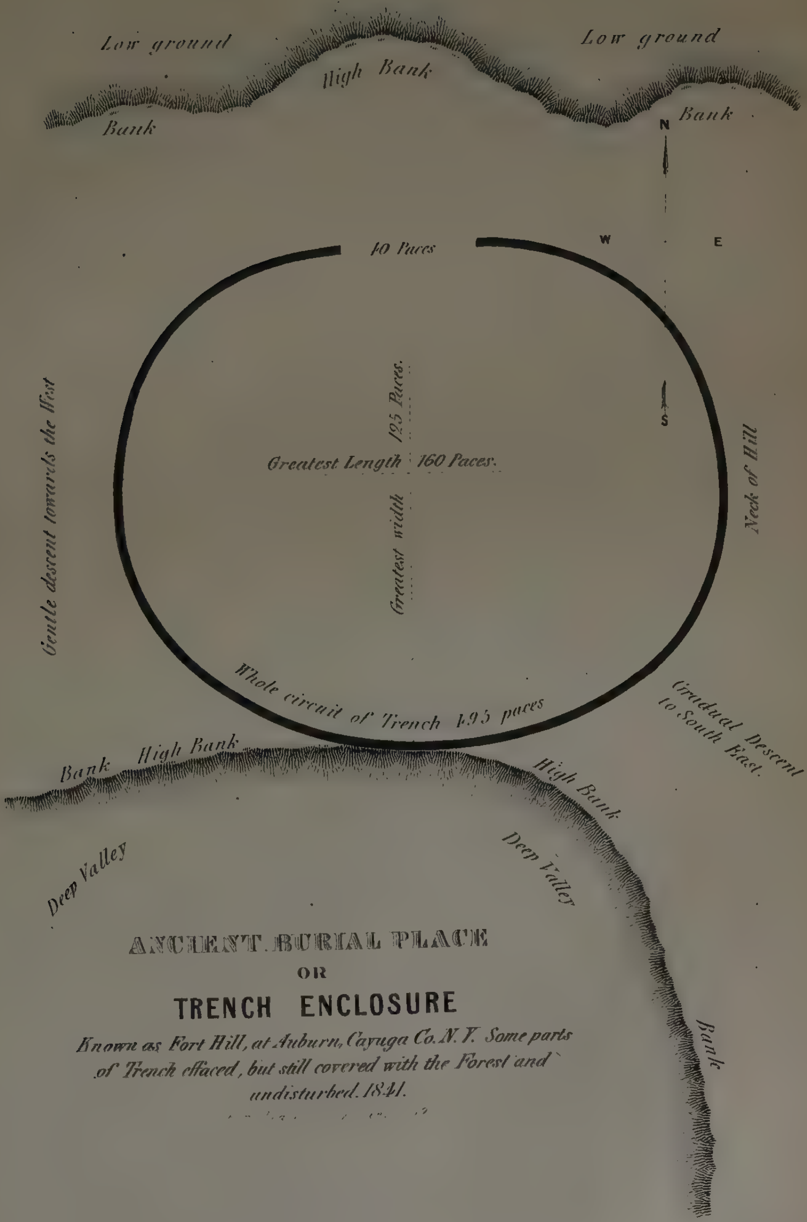
OR FORT HILLS (SO CALLED).



Palisade Fortification
AT
GA-NUN-DA-SA-GA

A village of the Senecas, near Geneva, N. Y. It was destroyed by Genl. Sullivan in Sept. 1779. The Trenches are still visible as shown in the ground plan. Nov. 1845.

N
S
W
E
Artificial mound 98 paces in circuit covered with graves.
Orchard.
25 Paces.
Greatest width 41 paces
4 p.
3 p
Apple Tree still standing.
Loose stones the remains of a forge or fire place both of which were within the enclosure
Heap of stones formerly a fire place or forge
Length of Side 72 paces of 2½ feet each.
Indian Orchard Apple Trees.
Greatest lenght from front to rear 83 paces or 208½ feet
59 paces
64 paces
A stub of this corner post was above ground in Nov. 1845 and accompanies the drawing.
12 paces
3 paces
3 paces
Opening 9 paces
33 paces
GA-NUN-DA-SA-GA CREEK
Geneva
GANANDASAGA or SENECA LAKE.

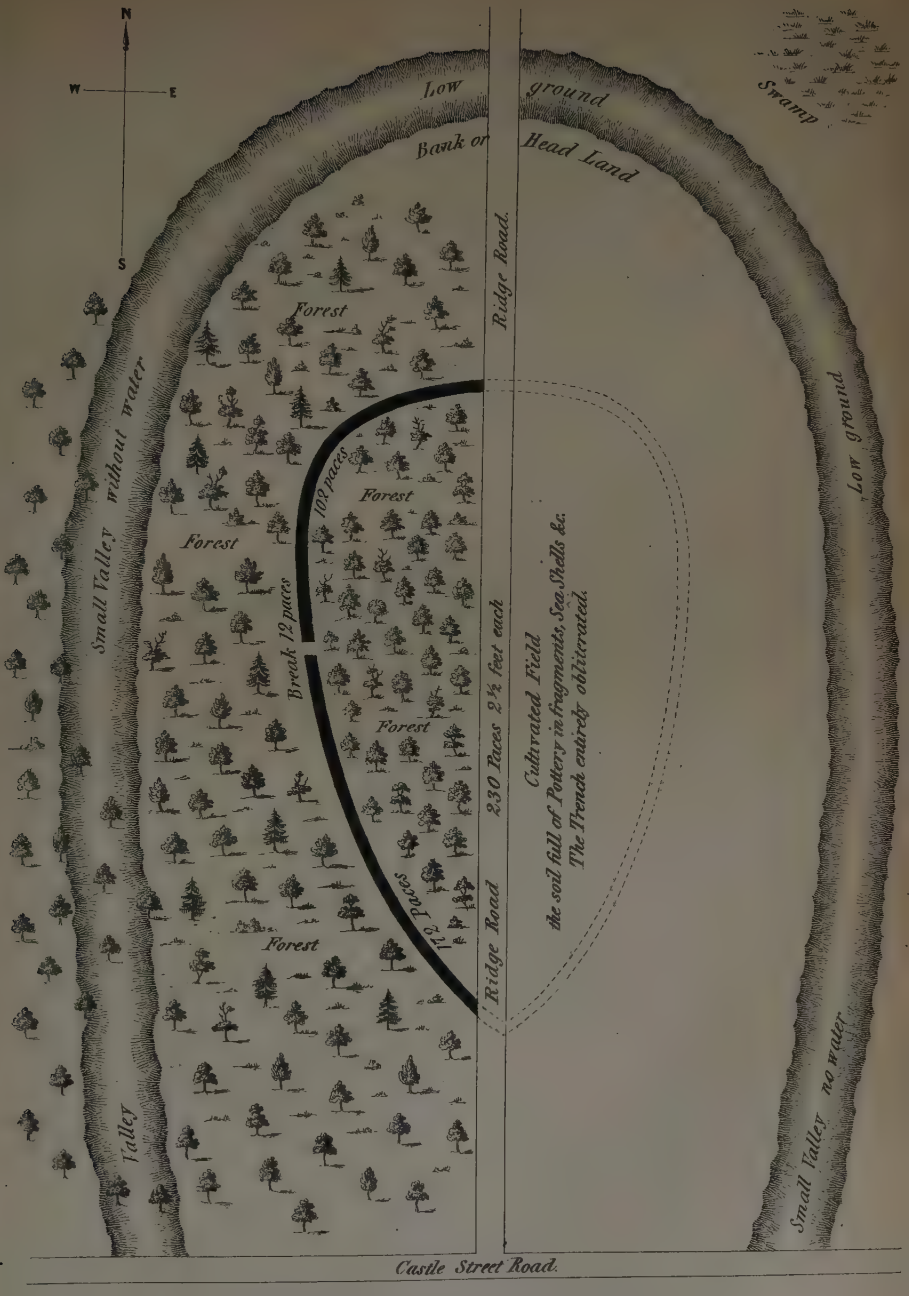


ANCIENT BURIAL PLACE

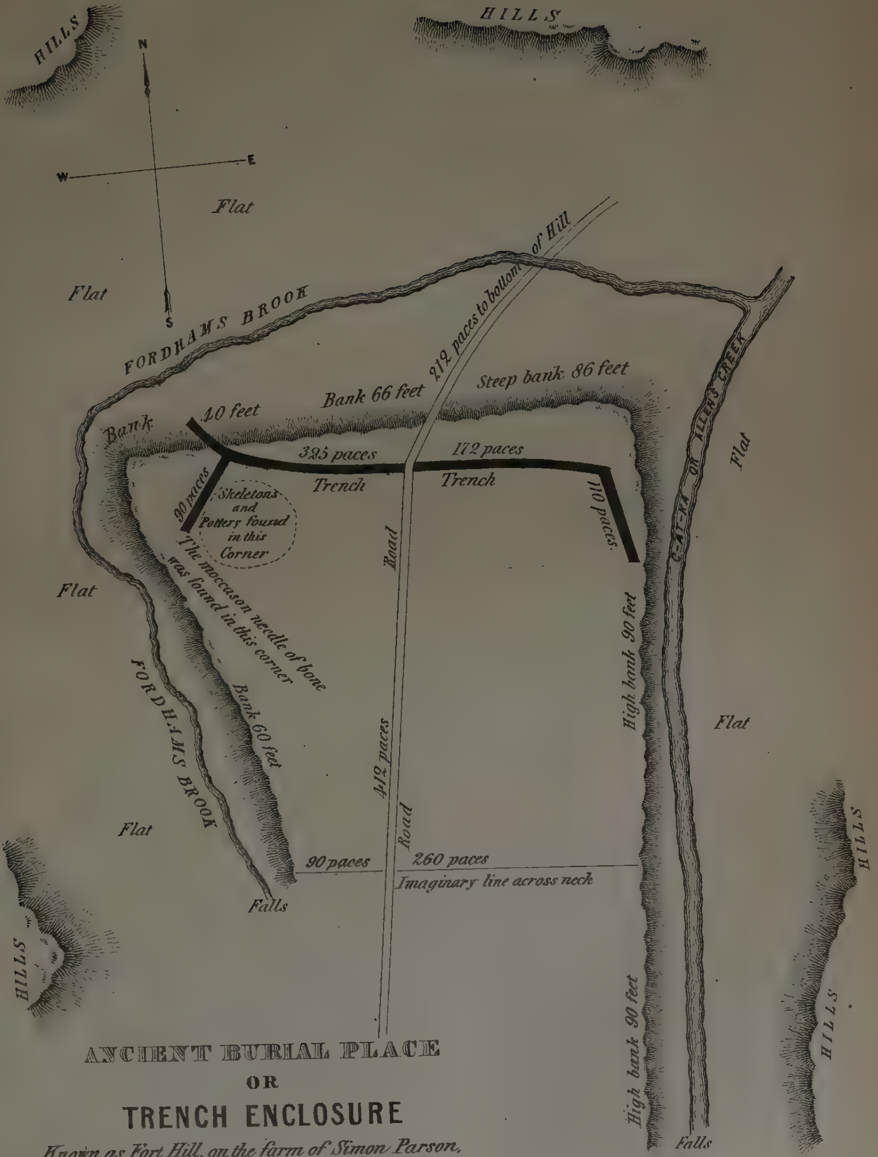
OR

TRENCH ENCLOSURE

Known as Fort Hill, at Auburn, Cayuga Co. N.Y. Some parts of Trench effaced, but still covered with the Forest and undisturbed. 1841.

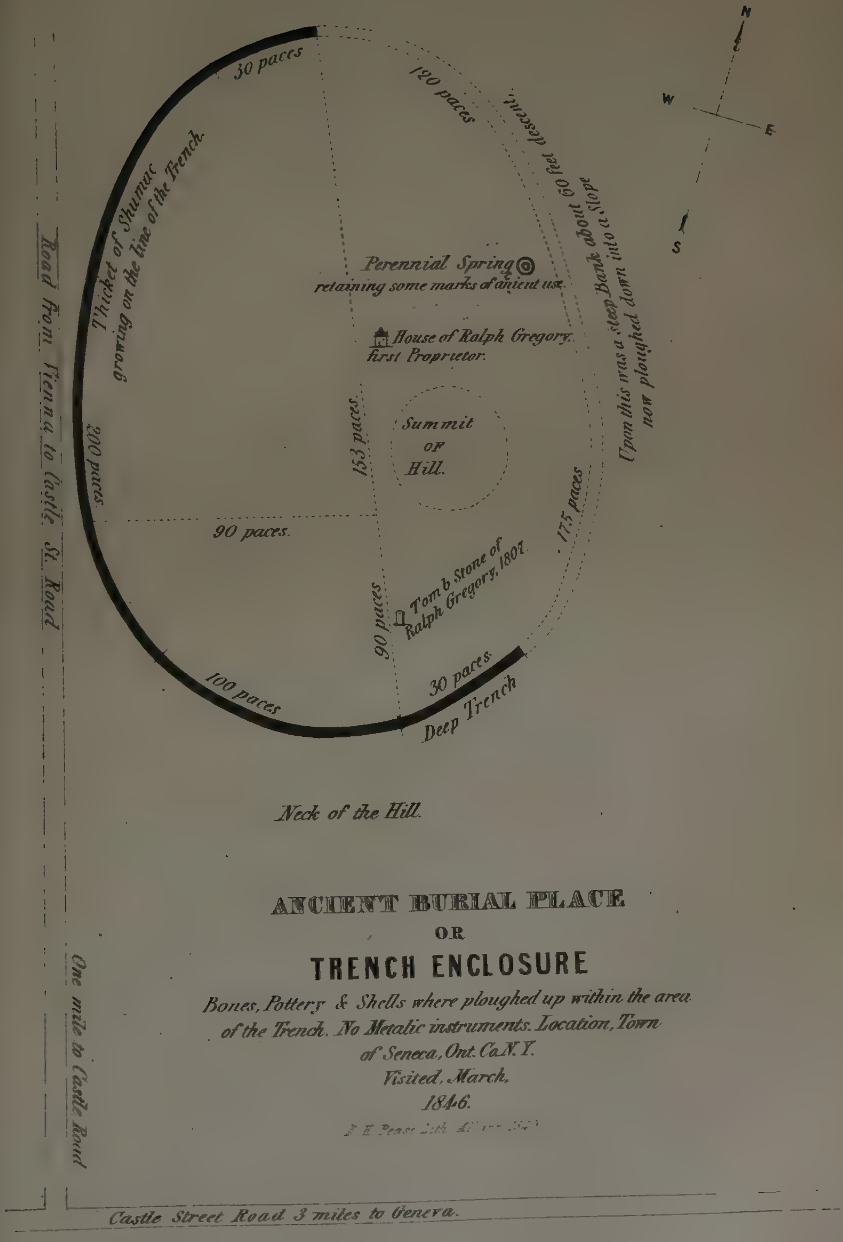


ANCIENT BURIAL PLACE, SURROUNDED BY A TRENCH
ON THE FARM OF JOSHUA PORTER.
Town of Seneca Ontario Co. N. York.
Visited, March, 1846.



ANCIENT BURIAL PLACE
OR
TRENCH ENCLOSURE
Known as Fort Hill, on the farm of Simon Parson,
Genesee Co. N.Y. between Le Roy & Bergen.
March 1846.

[illegible]


N
W
E
S
30 paces
120 paces
Thicket of Shumac growing on the line of the Trench.
Upon this was a steep Bank about 60 feet descent.
now ploughed down into a Slope
Perennial Spring
retaining some marks of anient use.
House of Ralph Gregory. first Proprietor.
153 paces.
Summit of Hill.
200 paces
90 paces.
175 paces
Tomb Stone of Ralph Gregory, 1807.
90 paces
100 paces
30 paces.
Deep Trench
Neck of the Hill.
Road from Vienna to Castle St. Road
One mile to Castle Road
Castle Street Road 3 miles to Geneva.

ANCIENT BURIAL PLACE
OR
TRENCH ENCLOSURE

Bones, Pottery & Shells where ploughed up within the area of the Trench. No Metalic instruments. Location, Town of Seneca, Ont. Co. N. Y.
Visited, March.
1846.

F H Pease Lith. Albany [illegible]

THIRD ANNUAL REPORT

OF THE

REGENTS OF THE UNIVERSITY,

ON THE

Condition of the State Cabinet

OF

NATURAL HISTORY,

AND THE

HISTORICAL AND ANTIQUARIAN COLLECTION.

ANNEXED THERETO.

Made to the Senate January 11, 1850.

ALBANY:
WEED, PARSONS & CO., PUBLIC PRINTERS.
1850.

REGENTS OF THE UNIVERSITY.

Hamilton Fish, Governor, *ex officio.*
George W. Patterson, Lieut. Governor, *ex officio.*
Christopher Morgan, Secretary of State, *ex officio.*
Gerrit Y. Lansing, Chancellor.
John Greig, Vice Chancellor.
Gulian C. Verplanck, LL. D.
John K. Paige.
Erastus Corning.
Prosper M. Wetmore.
John L. Graham.
John McLean.
Gideon Hawley, LL. D.
David Buel.
James S. Wadsworth.
John V. L. Pruyn.
Jabez D. Hammond, LL. D.
John L. O'Sullivan.
Robert Campbell.
Rev. Samuel Luckey, D. D.
Robert G. Rankin.
Philip S. Van Rensselaer.
(One vacancy.)

T. Romeyn Beck, Secretary.

John Gebhard, Jr.,
Curator of the "State Cabinet of Natural History."

STANDING COMMITTEE OF THE REGENTS,

Specially charged with the care of the State Cabinet.

1849.

THE GOVERNOR.
THE SECRETARY OF STATE.
MR. LANSING.
MR. CORNING.
MR. WADSWORTH.

REPORT.

TO THE LEGISLATURE OF THE STATE OF NEW-YORK.

The Regents of the University

RESPECTFULLY REPORT:

That during the past year, many and various additions have been made to the Cabinet. For the Zoological department, there have been procured a number of specimens of animals native to the State, and which were not previously in the collection. A list of those presented and purchased accompanies this report.

The engagements of Dr. Fitch, during the last season, have prevented him from increasing the collection of Insects, but the matter is still left in his charge, and he will doubtless, ere long, forward additional specimens.

The Regents have to state with regret, that some of the preserved animals have recently been found to be injured by the moth. An examination of them is now making by a competent person, who is directed to destroy such as may be too far affected, and also to take every means to prevent future loss through this cause.

The Botanical Collection continues in excellent order, and is carefully preserved.

Valuable donations have been received from various persons, for the Mineralogical and Geological Museum. These are particularly specified in the accompanying documents, but the Regents deem it proper to add, that a few months since, Dr. Nathaniel F. Moore, late President of Columbia College, tendered to them a collection of minerals, fossils and shells, made by his deceased nephew, Casimir De Rham, Jr. Although the State Cabinet is peculiarly appropriated to our native productions, still the interest attached to these memorials of a young and successful student of Natural History, required that the offer should be cheerfully accepted. Any anticipations that were entertained as to their value, have been greatly exceeded on their examination and arrangement. The collection includes many rare minerals, and highly prized fossils and shells. The curator has prepared a catalogue of them, which will give some idea of the industry and discrimination of one who was too early lost to science.

The Historical and Antiquarian collection continues to increase and flourish, beyond the most sanguine hopes of its projectors. Numerous and valuable presents have been made, and more are promised. Among these are some precious relics from the battle grounds of Saratoga, and a memorial of the victory of Commodore Perry on Lake Erie.

Donations also continue to be received of Indian relics, and in the spirit of the views expressed to the Legislature in their last annual report, the Regents deemed themselves justified in purchasing from Mr. E. G. Squire a number of aboriginal remains, which he had obtained in western New-York, and elsewhere.

A few months since, Mr. Lewis H. Morgan, of Rochester, whose liberal gifts have been enumerated in a former report, and who has continued them during the present year, suggested the propriety of endeavoring to bring together a full exhibition of the manufactures of the Indian tribes still remaining within our State, and thus to show, as it were, their transition condition, in the union of their ancient and rude constructions, with the improvements received through the whites. Mr. Morgan added, that he would with pleasure superintend the disposition of any appropriation that might be resolved upon. The Regents could not hesitate to agree to his offer. So rapid, indeed, is the progress of change, with the ancient lords of the soil, that what is to be done must be done quickly. A sum of money was accordingly placed at the disposal of Mr. Morgan, and the result has been the beautiful and interesting collection which now adorns the rooms. It is intended shortly to label each article with its English and Indian name, and the whole will be perfectly illustrated by the sketches accompanying the memoir which forms part of this report.

Dr. Franklin B. Hough, of St. Lawrence county, a contributor to the Mineralogical and the Antiquarian Collection, has also forwarded a "notice of several ancient remains of art in St. Lawrence and Jefferson counties," accompanied with sketches of the same, and the Regents transmit them as worthy of publication.

Our country presents many examples of the rapid progress from rude art to the most striking exhibitions of human kill, and the State Cabinet would scarcely be complete, without containing specimens of each. Through the liberality of Mr. McAlpine, engineer of the United States Dry Dock, at Brooklyn, there is now to be seen a plaster model of that great work; various specimens of granite employed in its construction, and a collection of soils, through which the necessary excavations for this purpose were made.

Several years have now elapsed since the publication of most of the volumes of the "Natural History of New-York," and it occurred to the Regents that means should be taken to ascertain, and as it were, post up, the progress of discovery and science in each of the departments to the present time. The suggestion was communicated to several of the persons formerly engaged in the State Survey, and the Regents have now the pleasure to present, as its first fruits, a report from Dr. Lewis C. Beck, the author of the Mineralogy of New-York, comprising notices of the additions made since 1842. Its intrinsic merits, and the labor evidently bestowed upon it, are its best recommendations.

The Regents, on the resignation of the curator, appointed John Gebhard, Jr., of Schoharie county, to that place, and he accordingly entered on its duties on the 1st of November last. Great reliance is placed on his well known devotion to, and his knowledge of, Natural History; and he has already given an abundant earnest, in the industry and zeal with which he has entered on the engagements of his office.

As to the pecuniary affairs of the Institution, the Regents beg leave to refer to the accompanying account current of receipts and expenditures. They have every assurance, that through a clerical error, the appropriation made last year for 1849 and 1850, was reduced one-half, through the omission of the words "for each of the years." Had it not been discovered that a small balance in the treasury devoted to this purpose, remained uncalled for, the committee acting under the direction of the Regents would have been altogether precluded from carrying out their views, and as they were well assured, those also of the Legislature. They therefore solicit that the present appropriation for 1850, viz: two hundred and fifty dollars, may be increased to five hundred dollars, and the last amount also granted for 1851.

Should this request be complied with, it is intended to order preserved specimens of the larger animals, still indigenous to our State. The Beaver, it is said, can still be obtained, but it may be extinct ere another year elapses; the Moose is rapidly diminishing; the Bear, the Wolf, and the Panther, should all be represented. But they must be captured at particular times and seasons; the hunter must be assured that he will be rewarded for his hazardous labors; and the taxidermist has too little of general encouragement, to attend to their proper preservation, unless he can rely on a sure and liberal patron.

It is principally for these reasons, that the Regents solicit an early and kind attention to the wishes now expressed.

By order of the Regents of the University.

G. Y. LANSING,
Chancellor.

T. ROMEYN BECK,
Secretary.

Papers accompanying the Report.

A. Account current of receipts and expenditures during 1849.

B. Catalogue of Quadrupeds, Birds, Reptiles, Amphibians, Fishes, and Crustaceans, added from January 1, 1849, to January 1, 1850.

C. Catalogue of Minerals, Geological specimens and Fossils, (including the Cabinet of the late Mr. De Rham,) added from January 1, 1849, to January 1, 1850.

D. Catalogue of additions (by donation and purchase) to the Historical and Antiquarian collection, from January 1, 1849, to January 1, 1850.

E. Catalogue of Reptiles and Amphibians, native to the State, and contained in the Cabinet, January 1, 1850.

F. Report to the Regents of the University upon the articles furnished to the Indian collection, by Lewis H. Morgan, of Rochester.

G. Notice of several ancient remains of art in Jefferson and St. Lawrence counties, by Franklin B. Hough, M. D., of Somerville, St. Lawrence county.

H. Report on the Mineralogy of New-York, comprising notices of the additions which have been made since the year 1842, by Lewis C. Beck, M. D., late Mineralogist of the Survey of New-York.

I. References to various essays and writings on the NATURAL HISTORY of New-York, mostly published subsequent to the respective volumes on that subject.

K. Index to the volumes in the State Cabinet of Natural History, containing the Plants of the State of New-York.

L. Description of new species of Fossils, from the Trenton limestone, by James Hall. (This paper was received immediately after the adoption of the annual report, but in compliance with a promise made early in the year.)

(A.)

The Regents of the University, in account current with the appropriations towards preserving and increasing the "State Cabinet of Natural History, and the Historical and Antiquarian collection annexed thereto, and for defraying the incidental expenses of the same."

	By balance remaining in the State Treasury, from the appropriations for 1847 and 1848, as per annual report, made January 12, 1849. (See Senate document No. 20, of 1849.)		$88 93
	By balance remaining in the State Treasury, on an appropriation made for the same purpose, and of which there has been drawn,		313 00
1849.			
April 14.	By the annual appropriation for 1849, deposited this day in the Albany City Bank,		250 00
			$651 93
1849.			
Jan'y 18.	By cash paid John G. Bell, for preserved animals and birds; settled as follows:		
	By a draft on the Comptroller,	$88 93	
	By voucher No. 1,	5 07	$94 00
April 17.	By cash paid Wells & Co., and (receipt left with the Comptroller) freight of boxes containing the above animals and birds, voucher No. 1		2 50
	By cash paid J. Gladding, for glazing, No. 2,		1 38
	By cash paid J. T. Robinson, by Dr. Torrey, for printing 1,674 labels for the State Herbarium, and for other expenses in arranging and re-examining the same, No. 3,		62 78
	Amount carried forward,		$160 66

	Amount brought forward,		$160 66
	By cash paid E. G. Squire, for his collection of Indian relics, from western New-York, No. 4.		50 00
	By cash paid J. A. Hurst, for sundry preserved animals and birds, No. 5,		10 50
	By cash paid T. R. Beck, for the shell of a tortoise, purchased, No. 6,		2 00
	By cash paid for contingent expenses, viz: No. 7.		
	Tozzoni, for repairing model of the Dry Dock,	$1 50	
	Freight and cartage of State Herbarium,	1 25	
	Hoffman's City Directory,	1 00	
			3 75
	By cash paid Mrs. Carroll, for cleaning rooms, No. 8,		4 00
	By cash paid for various contingent expenses, on the 24th of Oct., 1849, 7 vouchers, No. 9,		9 89
	By cash paid Lewis H. Morgan, of Rochester, by a draft on the Comptroller, for procuring a collection of Indian manufactures, &c., (voucher left with the Comptroller,)		215 00
	By cash paid J. A. Hurst, for collection of preserved animals, birds, and fishes,	$88 50	
	To Wells & Co., for freight of Mr. Morgan's Indian collection, from Rochester,	7 87	
	Wm. Wall, for cleaning rooms in October,	1 00	
	Cartage of Indian collection to the State Cabinet,	0 63	
			98 00
	(Paid by a draft on the Comptroller, and vouchers left with him.)		
1850.			$553 80
January.	By balance to new account,		98 13
			$651 93

(Copy.)

Albany City Bank, 1*st Jan'y*. 1850.

I certify that there is a balance of ninety-eight dollars and thirteen cents, standing to the credit of the "State Cabinet of Natural History," in the books of this bank.

(Signed) WATTS SHERMAN,
Cashier.

Albany. January 8, 1850.

We have examined the foregoing account, and believe it to be correct, having compared the same with the vouchers.

HAMILTON FISH,
G. Y. LANSING,
CHRISTOPHER MORGAN.

(B.)

CATALOGUE

OF THE

QUADRUPEDS, BIRDS, REPTILES, AMPHIBIANS, FISHES, &c.,

ADDED TO THE

State Cabinet of Natural History,

FROM JANUARY 1, 1849, TO JANUARY 1, 1850.

MAMMALIA.

ORDER CARNIVORA.

FAMILY VESPERTILIONIDÆ.

Zoology—Part I.

Vespertilio noveboracensis, *New-York Bat*, (male.) - - p. 6

Vespertilio subulatus, *Little Brown Bat*, (male.) - - - 8

Vespertilio noctivagans, *Silver-haired Bat*, (male & fem.) 9

Vespertilio carolinensis, *Carolina Bat*, (male.) - - - - 10

FAMILY SORECIDÆ.

Condylura cristata, *The Common Starnose*, (male.) - 12

FAMILY MUSTELIDÆ.

Putorius noveboracensis, *New-York Ermine*, (male, summer dress.) - - - - - - 36

Putorius vison, *The Mink*, (male.) - - - - - 37

FAMILY FELIDÆ.

Lyncus borealis, *Northern Lynx*. - - - - - - 50

ORDER RODENTIA.

FAMILY SCIURIDÆ.

Sciurus vulpinus, *The Fox Squirrel*, (male & fem.) - 59

FAMILY ARCTOMIDÆ.

Arctomys monax, *Woodchuck*, (male & female.) - - 68

FAMILY GERBILLIDÆ.

Meriones americanus, *Deer Mouse*, (female.) - - - - 70

FAMILY CASTORIDÆ.

FIBER ZIBETHICUS,	*Muskrat*, or *Musquash*, (male & f.)	75

FAMILY MURIDÆ.

MUS DECUMANUS,	*Brown Rat*, (male & female.) - -	79
MUS MUSCULUS,	*Common Mouse*, (male & female.)	82
MUS LEUCOPUS,	*Jumping Mouse*, (female.) - - -	82
ARVICOLA RUFESCENS,	*Tawny Meadow Mouse*, (male.) -	85
ARVICOLA HIRSUTUS,	*Beaver Field Mouse*, (male.) - -	86

BIRDS.

ORDER ACCIPITRES.

FAMILY FALCONIDÆ

		Zoology—Part II.
Buteo harlani,†	*Harlan's Buzzard*, (female.)	p. 11

FAMILY STRIGIDÆ.

Strix pratincola,	*American Barn Owl.*	31

ORDER PASSERES.

FAMILY HIRUNDINIDÆ.

Hirundo riparia,	*Bank Swallow*, (male.)	39

FAMILY AMPELIDÆ.

Bombycilla garrula,	*Black-throated Waxwing.*	43

FAMILY CERTHIDÆ.

Troglodytes americanus,	*Wood Wren.*	54

FAMILY SYLVIADÆ.

Sialia wilsoni,	*Bluebird*, (female.)	65

FAMILY MOTACILLIDÆ.

Anthus ludovicianus,	*American Titlark*, (female.)	76

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† Presented by A. F. Holmes, of Washington county, and mounted by T. C. Henry, gratuitously.

FAMILY SYLVICOLIDÆ.

		Zoology—Part II.
Vermivora celata,	*Orange-crowned Warbler*, (female.)	87
Sylvicola ruficapilla,	*Red-poll Warbler.*	89
Sylvicola æstiva,	*Summer Yellowbird*, (male.)	99
Sylvicola virens,	*Black-throated Green Warbler*, (male & female.)	100
Sylvicola maritima,	*Cape May Warbler*, (male.)	104
Culcivora cœrulea,	*Blue-grey Gnatcatcher.*	109

FAMILY MUSCICAPIDÆ.

Muscicapa acadica,	*Small Green-crested Flycatcher.*	112

FAMILY VIREONIDÆ.

Vireo olivaceus,	*Red-eyed Greenlet*, (male.)	124

FAMILY FRINGILLIDÆ.

Emberiza americana,	*Black-throated Bunting*, (m. & f.)	155
*Spiza cyanea,	*Indigobird*, (male.)	173
*Pyranga rubra,	*Black-winged Redbird*, (male.)	176

ORDER GRALLÆ.

FAMILY GRUIDÆ.

Ardea herodias,	*Great Blue Heron*, (female.)	219
Ardea exilis,	*Small Bittern*, (male.)	225
Ardea minor,	*American Bittern*, (female.)	226

FAMILY TANTALIDÆ.

Ibis mexicanus,	*Glossy Ibis*, (male.)	231

This beautiful specimen was shot on Grand island, in the Niagara river, by J. A. Hurst, in the month of August, 1844.

FAMILY SCOLOPACIDÆ.

Heteropoda semipalmata,†	*Semipalmated Sandpiper.*	236
Tringa pusilla,†	*Wilson's Sandpiper*, (2 specimens.)	244

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* To replace imperfect specimens.

† Presented by William Galbraith, of New-Jersey.

ORDER NATATORES.

FAMILY ALCIDÆ.

		Zoology—Part II.
Uria grylle,	*Black Guillemot,* (male.) - - -	278

FAMILY PROCELLARIDÆ.

Thalassidroma wilsoni,	*Wilson's Petrel.* - - - - - -	290

FAMILY PELECANIDÆ.

Phalacracorax carbo,	*Cormorant.* - - - - - - - -	292
Pelecanus fuscus,	*Brown Pelican.* - - - - -	294

FAMILY ANATIDÆ.

Anser canadensis,	*Wild Goose.* - - - - - - -	348
Cygnus americanus,	*American Swan.* - - - - - -	353

REPTILES.

ORDER TESTUDINATA.

FAMILY CHELONIDÆ.

Genus CHELONIA.

ZOOLOGY—Part III.

CHELONURA SERPENTINA, *Snapping Turtle.* - - - - - - p. 8

AMPHIBIA.

FAMILY SALAMANDRIDÆ.

ZOOLOGY—Part IV.

SALAMANDRA SUBVIOLACEA,* *Violet-colored Salamander.* - - 74

FISHES.

SUB-CLASS I. *Bony Fish*

ORDER II. *Abdominal.*

FAMILY SALMONIDÆ.

ZOOLOGY—Part V.

SALMO CONFINIS, *Lake Trout.* - - - - - - - p. 238

* Presented by GEORGE TODD, of Waterford.

Order VI. *Plectognathi.*

FAMILY GYMNODONTIDÆ.

Tetraodon ——,

This fish, which belongs to the genus Tetraodon, and apparently not described or figured in De Kay's Natural History, was taken in the Hudson river in 1848, off Sing-Sing, Westchester county, and presented by Joakim Urmey, of Sing-Sing.

Sub-Class II. *Cartilaginous Fishes.*

Order I. *Eleutheropomi.*

FAMILY STURIONIDÆ.

[Zoology—Part V.

Acipenser oxyrhincus, *Sharp-nosed Sturgeon.* - - - - 346

CRUSTACEA.

ORDER DECAPODA.

Zoology—Part VII.

Astacus bartonii,* *Freshwater Lobster*, or *Crawfish*, p. 23

From West river, Warren county.

Crangon septemspinosus,† *Bait Shrimp.* - - - - - - - 25

From Haverstraw bay.

* Presented by Pierre Van Cortlandt.

† Presented by John Holmes.

(C.)

LIST

OF

MINERALS, GEOLOGICAL SPECIMENS AND FOSSILS,

ADDED TO THE

State Cabinet of Natural History,

(Including the collection of the late Mr. De Rham.)

FROM JANUARY 1, 1849, TO JANUARY 1, 1850.

MINERALS.

DONATIONS.

From James H. Ball.

Sulphuret of iron, in limestone. From Stephentown, Rensselaer county.

Steatite, or soapstone. Locality unknown.

From C. F. Emery.

Carbonate of lime, or calcareous deposit, enclosing pebbles. From the town of Ithaca.

From N. S. Collier.

Limonite. From Hillsdale.

Black oxide of manganese. Hillsdale.

From John Fitch, Esq. of Troy.

Calcareous spar. From Mount Ida, Rensselaer county.

From Herr Driesbach.

Sulphuret of iron. From St. Johnsville, Montgomery county.

GEOLOGICAL, INCLUDING FOSSILS.

DONATIONS.

From Ledyard Lincklean, Esq.

A large mass of LIMESTONE, taken from the Marcellus shales of Manlius, Onondaga county, in which are imbedded four beautiful GONIATITES, the largest of which measures one foot in diameter.

Also a lesser mass, from the same locality, split apart longitudinally, exhibiting on one inner surface a GONIATITE and an ORTHOCERA, and on the other the matrices of the same fossils.

From Jonathan B Hart.

Seven specimens of Oriskany SANDSTONE, containing fossils. Found in Condor, Tioga county.

Also one specimen, with fossils, from the Hamilton Group. Found in the same county.

These specimens have been placed in the case containing the minerals, &c., of Tioga county, by the request of the donor.

CATALOGUE

OF

MINERAL AND GEOLOGICAL SPECIMENS,

RECEIVED FROM

FRANKLIN B. HOUGH, A. M., M. D.,

OF SOMERVILLE, ST. LAWRENCE COUNTY, N. Y.

The following is Dr. Hough's description of the specimens:

1, 2. Sulphate of barytes. From the farm of V. Phelps, Gouverneur, St. Lawrence county.

3, 4, 5. Sulphate of barytes. Farm of R. Dean, Antwerp, (near Ox Bow) Jefferson county.

6, 7, 8. Satin spar. Banks of Oswegatchie river, Rossie, St. Lawrence county.

9, 10. Scapolite. Gouverneur, St. Lawrence county.

11. Graphite. Rossie, near Indian river, one mile south of village, St. Lawrence county.

12. Specular iron ore. Bank of Vrooman's lake, Antwerp, Jefferson county.

13. Tremolite. Near Church's mills, Rossie, St. Lawrence co.

14, 15. Sulphate of barytes. (Locality of Nos. 1, 2.) Found between the Parish and Kearney ore beds, Rossie, St. Lawrence county, and referred to in the Geological Report of the third district, page 267.

16. Brecciated black serpentine. Keene iron mine, Antwerp, Jefferson county.

17. POTSDAM SANDSTONE, WITH SPHERICAL CONCRETIONS. Vicinity of the Caledonia or old Parish iron mine, Rossie, St. Lawrence county.

18. SERPENTINE AND STEATITIC PYROXENE. Village of Gouverneur, St. Lawrence county.

19. SPHENE (black) in crystals, imbedded in GNEISS. Near Gouverneur village, St. Lawrence county.

20. CALCAREOUS SPAR. Banks of Vrooman's lake, Antwerp, Jefferson county.

21. IRON SAND, (magnetic.) Shore of Buonaparte's lake, Diana, Lewis county.

22. CAST OF THE LABRUM OF AN ISOTELUS. Found in Ohio.

23. DODECAHEDRAL CRYSTALS OF SULPHURET OF IRON. Farm of John Robinson, Gouverneur, St. Lawrence county.

24. CUBIC CRYSTALS OF SULPHURET OF IRON. Same locality.

25. SPINELLE, (pale red.) Farm of Mr. Ayers, Gouverneur, near Somerville, St. Lawrence county.

26. CALCAREOUS TUFA. Martinsburgh, Lewis county.

27. CRYSTALIZED MICA. (5 specimens.) Vrooman's lake, Antwerp, Jefferson county.

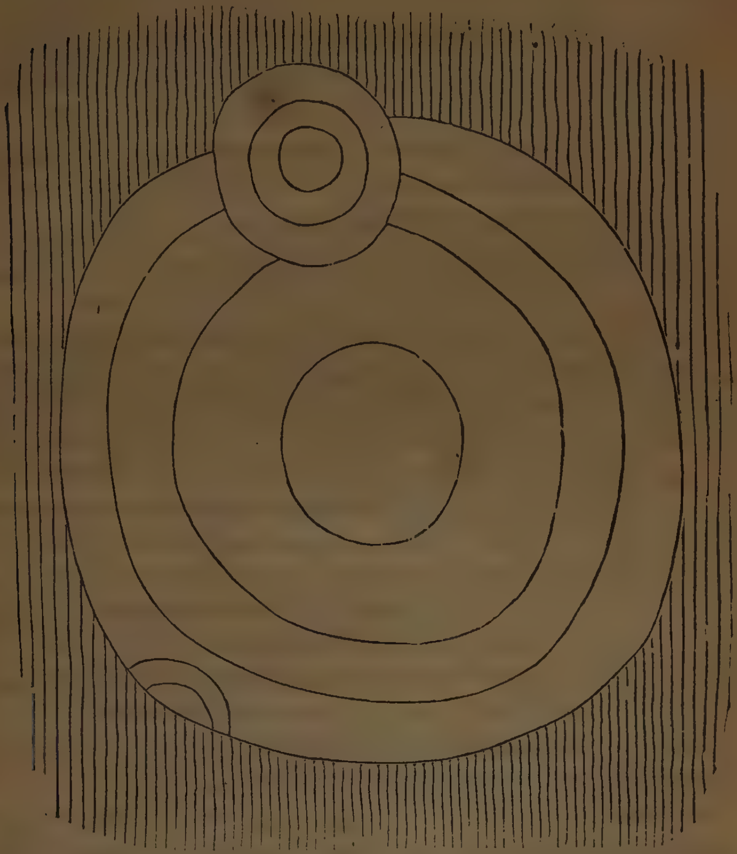
28. MINUTE CAPILLARY CRYSTALS OF SULPHURET OF NICKEL? Found on ANKERITE, and associated with CACOXENITE. Sterling iron mine, Antwerp, Jefferson county.

29. POTSDAM SANDSTONE, (cylindrical structure.) Rossie, St. Lawrence county.

This curious structure is frequently observed in this section of the country, and I do not recollect of having seen a satisfactory theory to account for its formation. These cylindrical masses are of all sizes, from three inches, to fifteen or twenty feet in diameter; and their *axes* are always nearly, if not exactly vertical. At times, two or more encroach on each other.

The large circle represented in the following figure, is about twelve feet in diameter, at the locality in Somerville, and the whole is nearly of the same level. The concentric lines of stratification are sometimes obscure, but the cylindrical structure is always sufficiently apparent. To no active agent can we attribute these interesting appearances with more plausibility, than that of water, revolving in the little vortices or eddies, and causing the sand, which is the principal constituent in the rock, to be deposited in circular layers; or entirely excavating a cylindrical cavity in the sand, before it had assumed the consistence of rock, and leaving it to be filled subsequently.

The following sketch is from the surface of the rock, in a field adjoining Somerville village.



The existence of smaller circular masses in the border of, or entirely within a larger one, without in the least interfering with the stratification of it, shows that the causes which produced them operated at distinct intervals of time, although their ages appear to be very nearly the same.

This must, upon the whole, be considered a very interesting problem in Geology.

F. B. H.

N. B. Mr. McAlpine's donation will be found in the additions to the "Historical and Antiquarian Collection."

COLLECTION OF THE LATE H. CASIMIR DE RHAM, JR.

Extract of a letter from NATHANIEL F. MOORE, LL. D., to the Secretary.

"I have taken the liberty to address to you, and have franked by Livingston & Wells' express a box, containing fossils, mineralogical specimens and shells, for the State Cabinet of Natural History.

"I did not know to whom these things ought to be consigned, but I felt sure that you would not decline the trouble of placing them in proper hands, if I have been mistaken in sending them to you. They belonged to a much regretted youth, my nephew, H. CASIMIR DE RHAM, Jr., who was passionately fond of Ornithology, and though cut off in early life, had collected a fine cabinet of birds. Some of the fossils in this box (which were obtained, I think, at Lyme Regis, and from Mary Anning herself,) may be found not unworthy of a place in the State Collection. Whether any of the shells (received, I believe, in exchange for birds,) are of value or not, I am wholly unqualified to judge. But whatever value they and the rest of the things may have once possessed, has, no doubt, been much impaired by the loss or transfer of labels, jostling about, and the various accidents to which they have been exposed during the last nine years.

"My sister, Mrs. DE RHAM, contemplating now a removal from her present residence, and at a loss in which way suitably to dispose of objects with which in some sort is connected the memory of her son, has thought she could not better show her respect therefor, than by sending them where, if they possess any intrinsic value, they will be rightly cared for. If any thing should be found among them worth inserting in the Annual Catalogue, and it should be thought necessary to give credit to the donor, it will be proper to name as such, H. C. DE RHAM, Esq."

CATALOGUE.

GEOLOGICAL.

1 to 50, inclusive. ROCK SPECIMENS, from Cumberland. There is no catalogue accompanying these geological specimens, and the late day at which they were received, has not afforded sufficient time to determine and name them. It is hoped, however, that the next Annual Report will contain the name of each specimen.

MINERALOGICAL.

51. CARBONATE OF BARYTES, incrusted with copper pyrites and carbonate of lime.
52. CRYSTALIZED SULPHATE OF BARYTES. Crystals in the form of *epointée*, of *Haüy*. From Devonshire, England.
53. CALCAREOUS CONCRETION. From the *Lago de Tartari*, near Rome.
54. CARBONATE OF LIME, in botryoidal concretions.
55. BOTRYOIDAL MAGNESIAN LIMESTONE. From Durham.
56. FIBROUS LIMESTONE, edges polished.
57. FIBROUS SULPHATE OF LIME. Derbyshire, England.
58. FIBROUS GYPSUM. Nova Scotia.
59. COMPACT FLUOR SPAR.
60. CRYSTALIZED FLUOR SPAR, polished.
61. CRYSTALIZED FLUOR, on blende. Matlock. England.
62. WHITE CRYSTALIZED FLUOR, upon zinc ore. Derbyshire, England.
63. FLUOR SPAR, crystalized in cubes, of a beautiful bluish tint. Cumberland, England.
64. FLUOR SPAR, crystalized in cubes, of a beautiful green. From Cumberland.
65. FLUOR SPAR, crystalized in cubes; colorless.
66. FLUOR SPAR, incrusted with crystals of carbonate of lime.
67. VEINED FLUOR, polished. Derbyshire.

68. Veined fluor, called by the miners, Blue John.
69. Group of quartz crystals, incrusted with transparent, terminated, six-sided prisms of heavy spar.
70, 71. Two six-sided prisms of quartz, with six-sided pyramids, of a beautiful brownish tint.
72. Pseudomorphous quartz, sprinkled with blende. From Alston, England.
73. Talc.
74. Green talc.
75. Black spinelle.
76. Brown garnet. Crystals with twenty trapezoidal faces.
77. Green feldspar. Siberia.
78. Glassy feldspar. Near Bonn.
79. Chrysoberyl. Near Saratoga Springs.
80. Beryl. Acworth, N. H.
81. Beryl, (imbedded.) Acworth, N. H.
82. Staurotide. Litchfield, Massachusetts.
83. Staurotide. Franconia.
84. Brucite, in carbonate of lime. Warwick, New-York.
85. Onyx agate. Siberia.
86. Chrysoprase. Baumgarten.
87. Olivine. Habichtwald.
88. Cyanite. Chesterfield.
89. Asbestus. Greenwood furnace, Orange county, New-York.
90. Gold ore. Charlotte, North Carolina.
91. Silver ore. Siberia.
92. Muriate of silver. Siberia.
93. Copper ore. Franklin, New-Jersey.
94. Arseniate of copper, on arsenical iron. Amity, New-York.
95. Red oxide of copper. Siberia.
96. Red oxide of copper, incrusted with green carbonate of copper and quartz. Siberia.
97. Blue carbonate of copper. Siberia.
98. Malachite. Siberia.
99. Veins of lead ore. From the Odin mine.
100. Slicken side galena. From the Odin mine.
101. Arseniate of lead. From Caldbeck Fells, Cumberland.
102. Arsenical pyrites ? incrusting quartz crystals. Caldbeck Fells, Cumberland.
103. Molybdena. Caldbeck Fells.

104. Uranite. Cornwall, England,
105. Oxide of tin. Cornwall, England.
106. Axinite. Cornwall, England.
107. Axinite. Cornwall, England.
108. Volcanic basalt. Cassel.
109. Mineral caoutchouc. England.
110. Elastic bitumen.
111. Carbonate of lead.
112. Sulphuret of zinc and tin. Hartz, Germany.
113. Crystalized brown oxide of iron. Cornwall.
114. Massive garnet.
115. Semi opal.
116. Porphyry, containing bronzite,
117. Lepidolite and rubellite. Paris, Maine.
118. Drusy quartz.
119. Auriferous pyrites. North Carolina.

FOSSILS.

120. Calymene senaria, (folded.) (Hall.) Trenton limestone.
121. Head and post abdomen of Calymene senaria. (Hall.) Trenton limestone.
122. Cephalic shield, of Trinucleus concentricus. (Hall.) Trenton limestone.
123. Matrix of calymene senaria. (Hall.) Trenton limestone ?
124. Bellerophon bilobatus, *variety*, corrugatus. (Hall.) Trenton limestone.
125, 126, 127. Chætetes lycoperdon. (Hall.) Trenton limestone.
128. Calymene blumenbachii, (in two positions.) (Brongniart.) From Dudley, England.
129. A slab, covered with small bivalves, fragments of crustaceans, corallines, &c. From Dudley, England.
130. Post abdomen of an asaph. (Not described in Murchinson.) From Dudley, England.
131. Euomphalus pentangularis. From the mountain lime of Samplough, Cumberland, England.
132. Spirifer obtusis. From Egalsfield, Cumberland, England.
133. Spirifer attenuatus. From Samplough, Cumberland, England.
134. Bivalve, (genus Allorisma, of King.) From Parkhead, Cumberland, England.

135. BIVALVE, (genus ALLORISMA, of King.) Parkhead, Cumberland.
136. SPIRIFER GLABER. Mountain limestone, of England.
137. SPIRIFER LYNX. Mountain limestone. England.
138, 139. ORTHIS RESUPINATUS. Mountain limestone. England.
140. FAVOSITES, (polished.) Mountain limestone. England.
141. SPIRIFER. Mountain limestone. England.
142. ACROCULIA. From Oriskany sandstone.
143, 144. CORNULITES ARCUATUS. Niagara limestone.
145. CAST OF LEPTÆNA. From Schoharie grit.
146. CRINOIDAL COLUMN. Mountain limestone. England.
147. CORALLINE, (silicified.) Corniferous limestone.
148. ENCRINAL MARBLE, (polished.) Derbyshire, England.
149. ENCRINAL MARBLE, (polished.) Peak Castle, England.
150. PECTEN? From the top of one of the mountains of the Jura chain, Switzerland.
151, 152. CALAMITES. Cumberland, England.
153. CALAMITES ——? Workington, Cumberland.
154. CALAMITES ——? Parton, Cumberland.
155. STIGMARIA ——. Cumberland, England.
156. LEPIDODENDRON ——. Cumberland, England.
157. LEPIDODENDRON ——. Cumberland, England.
158. LEPIDODENDRON ——. Cumberland, England.
159. ODONTOPTERIS ——. Parton, Cumberland.
160. NEUROPTERIS ——. Somerset, England.
161, 162. PECOPTERIS MANTELLII. Near White Haven, Cumberland.
163. ODONTOPTERIS ——. From White Haven, England.
164. SPHENOPTERIS AFFINIS? White Haven, England,
165, 166. SPHENOPTERIS ——. White Haven, England.
167. ASTEROPHYLLITES PARKINSONI. Parton, Cumberland.
168. ASTEROPHYLLITES ——. Parton, Cumberland.
169, 170. VERTEBRA of the ICHTHYOSAURUS. Lyme, in Dorsetshire, England.
171. LEFT HIND PADDLE of the ICHTHYOSAURUS PLATYODON. From the Lias, England.
172. RIGHT FORE PADDLE of ICHTHYOSAURUS PLATYODON. From the Lias, England.
173. COPROLITE. One of the sides is polished, exhibiting a fish scale, and the enamelled portions of fishes that remained undigested by the ICHTHYOSAURUS. From the Lias, England.
174. FOSSIL FISH. Scotland.

175, 176. Fossil teeth of Ichthyosaurus. From the Blue Lias of Lyme, Dorset, England.

177. Ammonites obtusus. From the Lias, England.

178. Ammonites nodosus ? From the Lias, England.

179, 180. Ammonites. Matlock, England.

181. Ammonite. From the Lias, England.

182. Ammonite. From the Lias, England.

183. Ammonite. From the Lias, England.

184. Ammonite. From Whitby, England.

185, 186. Gryphæa incurva. Clifton, Somerset, England.

187. Gryphæa columba. Beds of the Tiverlane.

188. Ammonite. From Oolite, England.

189. Gryphæa ? 13 specimens. Lias ? England.

190. Shark's tooth. From the Oolite, England.

191, 192. Terebratula. From the Oolite, England.

193. Ichthyodorulite, (mineralized by sulphuret of iron.) From the Lias, England.

194. Shark's tooth, imbedded in chalk. From the cretaceous formation, England.

195. Turrelites costatus. Chalk marl, England.

196. Belemnites mucronatus. Cretaceous formation, Yorkshire, Eng.

197. Exogyra costata. Green sand, New-Jersey.

198, 199, 200. Gryphæa mutabilis. Green sand, New-Jersey.

201. Galerites. From the cretaceous formation, Yorkshire, England.

202. Ananchytes ovatus. From the cretaceous formation, Yorkshire, England.

203. Scutella. From the cretaceous formation, England.

204. "Murex (Fusus) contrarius. (Sowerby.) Given to me by Prof. Sedgwick, at the Woodwardian Museum, Cambridge, March 6th, 1837. H. C. De Rham Jr." From the Red crag, Eng.

205. Fusus, covered with Balanæ. From the Red crag, England.

206. Fossil wood. From Alabama.

207. Petrified wood. From near Utica.

208. Nautilus truncatus. Lias, England.

209. Cast of Pleurotomaria. Lias, England.

210, 211. Casts of a univalve. Lias, England.

MAMMALIA.

212, 213. SKULL of the SKUNK, (*Mephites americana.*)
214. SKULL of the FISHER, (*Mustela canadensis.*)
215, 216. SKULL of the AMERICAN SABLE, (*Mustela martes.*)
217. SKULL of the NORTH AMERICAN OTTER, (*Lutra canadensis.*)

ORNITHOLOGICAL.

218. UPPER MANDIBLE of the ALBATROSS. From South America.

ICHTHYOLOGICAL.

ORDER PLECTOGNATHI.

FAMILY GYMNODONTIDÆ.

219. DIODON PILOSUS, *Hairy Balloonfish.* New-York bay.

FAMILY OSTRACIONIDÆ.

220. LACTOPHRYS DE RHAMII? Taken on the shore of Long Island. Not described in DE KAY's Zoology.

CHARACTERISTICS. No orbital spines; back elevated in the form of a crescent, longitudinally, with two spines, centrally situated on the periphery of the crescent, and distant one-third of an inch from each other; three spines on each side of the abdomen; length four inches.

Should this prove to be an undescribed species, it is proposed to name it *De Rhamii*, in honor of the late HENRY C. DE RHAM, Jr.

CONCHOLOGICAL.

Specimens arranged and named according to LAMARCK.

CLASS ANNELIDES.

ORDER SEDENTARIA

FAMILY SERPULACEA.

221, 222, 223. SERPULA VERMICULARIS.

CLASS CIRRIPEDES.

ORDER SESSILE CIRRIPEDES.

224. TUBICINELLA BALÆNARUM. The Tubicinellæ are found with nearly the whole shell buried in the thick skin of the Whale.

225. CORONULA BALÆNARIS.

226. CORONULA BALÆNARIS. 6 specimens, on a piece of Whale skin.

CLASS CONCHIFERA.

ORDER C. DIMYARIA.

FAMILY CONCHACEA. (*Marine.*)

227. CYTHEREA MACULATA.

228. CYTHEREA DIONE.

229. CYTHEREA ——.

230. CYTHEREA ——.

FAMILY CARDIACEA.

231. CARDIUM ——.

232. CARDIUM ——.

233. CARDIUM ——.

234. ISOCARDIA MOLTKIANA.

FAMILY ARCACEA.

235. ARCA ——.

FAMILY NAYADES.

236. UNIO ——.

ORDER MONOMYARIA.

FAMILY MYTILACEA.

237. PINNA SQUAMOSA?

FAMILY PECTINIDES.

238. PECTEN ——.
239. PECTEN ——.

CLASS MOLLUSCA.

ORDER GASTEROPODA.

FAMILY PHYLLIDINA.

240. CHITON ——. 5 specimens.
241. CHITON ——.
242. CHITON ——.

FAMILY BULLÆANA.

243. BULLA AMPULLA.

ORDER TRACHELIPODA.

FAMILY COLIMACEA.

244. HELIX POMATIA. England.
245. HELIX ASPERSA. England. 3 specimens.
246. HELIX MELANOTRAGUS. Africa.
247. HELIX NEMORALIS. England.
248. HELIX ——. England. 2 specimens.
249. HELIX ——. West Indies.
250. HELIX ——. West Indies.
251. HELIX ——. West Indies.
252. CAROCOLLA ——. West Indies.
253, 254. BULINUS ROSACEUS. West Indies.
255. BULINUS ROSACEUS, (young.)
256, 257. PUPA ——. West Indies.
258. AURICULA ——. West Indies.

FAMILY LIMNEANA.

259. Limnæa stagnalis.
260. Planorbis corneus.

FAMILY PERISTOMATA.

261. Ampullaria fasciata. 3 specimens.
262. Ampullaria guinaica. West Indies.
263. Paludina ——. 2 specimens.

FAMILY NERITACEA.

264. Neritina spinosa.
265. Neritina ——.
266. Natica mamilla. 2 specimens.
267. Natica ——.
268. Natica ——.
269. Natica ——. 2 specimens.
270. Nerita peloronta. 2 specimens.
271. Nerita versicolor.
272. Nerita ——.

FAMILY MACROSTOMATA.

273. Sigaretus concavus.
274. Haliotis tuberculata.
275. Haliotis canaliculata.
276. Haliotis ——. 5 specimens.

FAMILY TURBINACEA.

277. Solarium granulatum.
278. Rotella. Not figured or described by Kiener. Seas of Tropical climates.
279. Rotella. Not figured or described by Kiener.
280. Rotella. Not figured or described by Kiener. The three preceding species would be considered by Kiener as *varieties* of Rotella lineolata.
281. Trochus maculatus.
282. Trochus ——. 2 specimens.
283. Trochus ——.
284. Margarita ——. 2 specimens.
285. Margarita ——.
286. Planaxis ——.
287. Turbo ——.
288. Turbo ——.

289. TURRITELLA DUPLICATA. Ceylon.
290. TURRITELLA CINGULATA. (Sow.) Pacific ocean.

FAMILY CANALIFERA.

291. CERITHIUM TUBERCULATUM.
292. TURBINELLA CORNIGER.
293. TURBINELLA POLYGONA.
294. FASCIOLARIA AURANTIACA ?
295. FUSUS MORIO. (Varietas.)
296. PYRULA MELONGENA.
297. PYRULA CARICA.
298. PYRULA MELONGENA. (Varietas.)
299. RANELLA BECKII. (Kiener.)
300. MUREX REGIUS. 4 specimens.
301. MUREX BRASSICA. 2 specimens.
302. MUREX RADIX. 3 specimens.
303. MUREX BRANDARIS. 2 specimens.
304. MUREX PINNATUS. (Swains.)
305. MUREX ELONGATUS.
306. MUREX ERINACEUS.
307. MUREX CALCAR. (Kiener.)
308. MUREX CRASSILABRUM ? (Gray.)
309. TRITON VARIEGATUM.
310. TRITON SUCCINCTUM.
311. TRITON SUCCINCTUM. (Young shell.)

FAMILY ALATÆ.

312. ROSTELLARIA PES-PELICANI. 2 specimens.
313. STROMBUS LENTIGINOSUS. 2 specimens.
314. STROMBUS CANARIUM.
315. STROMBUS PUGILIS. 2 specimens.
316. STROMBUS GRANULATUS. (Sow.) Indian ocean.
317. STROMBUS GRACILIO. (Sow.) Pacific ocean.
318. STROMBUS GIBBERULUS. Moluccas.
319. STROMBUS FLORIDUS. Moluccas.
320. STROMBUS VITTATUS. (Linn.) Moluccas.

FAMILY PURPURIFERA.

321. CASSIDARIA ——.
322. CASSIS TESTICULUS. 3 specimens.
323. CASSIS ERINACEUS.
324. RICINULA HORRIDA.
325. PURPURA HÆMASTOMA. 2 specimens.
326. PURPURA MARGINALBA. (De Blainv.) (Varietas, Kiener.)

327. Purpura intermedia. (Kiener.)
328. Purpura deltoidea.
329. Purpura patula.
330. Purpura textilosa. (Young shell.)
331. Purpura costata. (De Blainv.)
332. Purpura chocolatum. (Duclos.)
333. Purpura sertum. 2 specimens.
334. Monoceros crassilabrum.
335. Monoceros ——.
336. Dolium variegatum. (Young shell.)
337. Dolium variegatum.
338. Dolium perdix.
339. Buccinum papillosum. 7 specimens.
340. Buccinum undatum. 3 specimens.
341. Buccinum reticulatum.
342. Buccinum quoyii. (Kiener.)
343. Terebra cœrulescens. 2 specimens.

FAMILY COLUMELLATA.

344. Columbella meleagris. (Duclos.)
345. Mitra melongena.
346. Voluta musica.

FAMILY CONVOLUTÆ.

347. Ovulum ovum. From the hole pierced in the outer lip of this shell, it was undoubtedly worn by a native female of one of the South Sea islands, as an ear ornament.
348. Cypræa nucleus. Pacific ocean.
349. Cypræa tigris. 3 specimens.
350. Cypræa mauritiana.
351. Cypræa histrio. 2 specimens.
352. Cypræa talpa.
353. Cypræa adusta.
354. Cypræa achatina. New-Holland.
355. Cypræa lurida.
356. Cypræa lynx. 3 specimens.
357. Cypræa caput-serpentis.
358. Cypræa zigzag.
359. Cypræa caurica. 4 specimens.
360. Cypræa vitellus.
361. Cypræa carneola. East Indies. 2 specimens.
362. Cypræa erosa. Indian ocean.

363. CYPRÆA ——. (Young shell.)
364. CYPRÆA RUVEI. New-Holland. 3 specimens.
365. CYPRÆA XANTHODON.
366. OLIVA PORPHYRIA.
367. OLIVA INFLATA. 2 specimens.
368. OLIVA ANGULATA.
369. OLIVA SAYII. 3 specimens.
370. OLIVA EPISCOPALIS.
371. OLIVA PERUVIANA.
372. OLIVA UTRICULUS. (Varietas.)
373. OLIVA DACTYLEA. 3 specimens.
374. OLIVA SUBULATA.
375. OLIVA RETICULARIA.
376. OLIVA UTRICULUS. 2 specimens.
377. OLIVA ——.
378. OLIVA ——.
379. OLIVA ——.
380. CONUS NEBULOSUS.
381. CONUS MUSTELINUS. (Brug.)
382. CONUS ACHATINUS. (Brug.)
383. CONUS COLUMBA. (Brug.)
384. CONUS MONILE. (Brug.)
385. CONUS TEREBRA. (Brug.)
386. CONUS VERRICULUM.

RADIATA.

CLASS ECHINODERMATÆ.

387. ASTERIAS ACULEATA.
388. ASTERIAS ——. (GONIASTER of Agassiz.)
389. ECHINUS SPHÆRA.

CLASS POLYPI.

390. FUNGIA AGARICIFORMIS.
391. FUNGIA ——.
392. OCULINA RAMEA.
393. OCULINA ——.
394. MADREPORA MURICATA.
395. MADREPORA ——.
396. NULLOPORA ——.
397. SPONGIA ——. Attached to an ARCA

(D.)

ADDITIONS

TO THE

HISTORICAL AND ANTIQUARIAN COLLECTION

IN THE

State Cabinet of Natural History,

(By Donation and Purchase.)

FROM JANUARY 1, 1849, TO JANUARY 1, 1850.

DONATIONS.

From SAMUEL G. EDDY, Esq., *of Stillwater, N. Y.*

The following description, drawn up by Mr. EDDY, accompanies the Relics.

1. CARD OF INDIAN ARROW HEADS, (17) found in the immediate vicinity of the battle ground at Bemis' Heights. Arrow heads of similar materials and construction, are to be found, after the spring rains, on all the plowed lands between Stillwater village and Wilber's basin, a distance equal to five miles.
2. CANNON BALLS, (2) found on the battle ground at Bemis' Heights.
3. CARD OF MILITARY BUTTONS, (5) with the Roman numerals XX, distinctly visible on the faces. These buttons were worn by a soldier or soldiers of the 20th regiment of Hamilton's brigade, in Burgoyne's army. The 9th, 20th, 21st, and 62d regiments, were that portion of Burgoyne's army which was engaged in the bloody conflict at "Freeman's Cottage," Bemis' Heights, on the 19th day of September, 1777. These buttons, together with human bones, a large pocket knife, belt buckle, pewter spoon, and a stick of healing salve, were plowed up in the month of October, 1849, within the grounds enclosed by the British entrenchments.
4. LEAD BALLS and IRON GRAPE SHOT, (13 in all) found on the "Freeman Farm," in the year 1848.
5. A SPANISH SILVER COIN, (*Pistareen*) dated 1721. This coin, together with two others of the same date and denomination, three Spanish milled quarter dollars, twelve guineas and two half joes, (in all about eighty dollars) were plowed up by Mr. Ebenezer Leggett, in the fall of 1849, within the British entrenchments, and near the celebrated "Freeman Cottage." A portion of this coin is now in my possession.

6. **PIECE of the PLANK on which Gen. FRAZER DIED.** This gallant officer was mortally wounded on the 7th of October, 1777, about two miles west of the Hudson river, by a rifleman of Col. Morgan's company. He was brought from the field of battle and taken to the "Smith house," (then used as a British hospital) which was situated on the Whitehall turnpike, some six miles north of the present village of Stillwater, and expired about eight o'clock A. M., the following day. By his own request, he was buried in the great redoubt on the hill, at six o'clock in the evening of the same day on which he expired. The "Smith house" was taken down in the year 1844, and the plank on which General Frazer died, and of which the piece presented to the State Cabinet is a portion, was preserved by the proprietor for the Antiquarians of his country.

7. **PIECE OF A SOLDIER'S BLANKET**, dug up with human bones, near the camp of Lord Balcarras, (who was one of the commanding officers in Burgoyne's army) at Bemis' Heights, seventy-one years after the battle of October 7, 1777.

8. **A BOMB SHELL.** This was one of the trophies taken at Bemis' Heights in October, 1777. The following spring several bateaux were loaded with shells, cannon balls, &c., for shipment to Albany, one of which sunk at Stillwater village, a short distance above the falls, in the Hudson river. During the season of low water the past summer, many of these shells and balls were dug from the bed of the river, one of which is the one now presented to the State Collection. The greater part of them I have in my collection of revolutionary relics.

From E. A. BALDWIN, *of Lysander, January* 15, 1849.

STONE SKINNING CHISEL. Found in Lysander, Oswego county.

From A. C. HASCY, *of Albany.*

INDIAN ARROW HEAD. Found in Watervliet, Albany county.

From DAVID EMERY, *Esq.*

STONE PESTLE, used in pounding maize. Found at the head of Cayuga lake, Tompkins county, by Henry Hungerford.

From JOHN DELAFIELD, *of Oaklands, near Geneva.*

A copy of an "Inquiry into the origin of the Antiquities of America, by John Delafield, Jr.; with an appendix by James Lakey, M. D." 4to. Cincinnati, 1839.

From CHRISTOPHER MORGAN, *Secretary of State.*

SPECIMENS OF SHELL CONCRETIONS, forming the surface rock on which the city of St. Augustine, in Florida, is built.

From NATHANIEL MILLER, M. D., *member of Assembly from the county of Suffolk*, 1849.

A PLATE OF MICA, turned up by the plow several years since, in the town of Brookhaven, at a depth of about two feet below the ground. On one side of this plate, are several engravings of geometrical and other figures.

From ASA FITCH, M. D., *of Salem, Washington county, Dec.* 6, 1849.

1. SWORD, which belonged to Burgoyne's army.
2. BAYONET, do do

Thomas Whiteside, one of the Cambridge (Washington county) militiamen, in service at Saratoga at the time of Burgoyne's surrender, on his return home, brought the above articles. They have been preserved in his family ever since, and are now given to the State Collection by his son, Thomas C. Whiteside.

3. INDIAN AXE, found at Fort Miller. From John Pattison.
4. Part of an INDIAN SPEARHEAD, made of subhyaline quartz. Found at Fort Miller. From John Pattison.
5. INDIAN SPEARHEAD. Salem.
6. INDIAN SPEARHEAD. Salem.
7. INDIAN ARROWHEAD. Salem.
8. INDIAN ARROWHEAD. Salem.

From STEPHEN VAN RENSSELAER.

A part of the STEM of the AGAVE AMERICANA, (Century Plant) which flowered in his greenhouse some years since.

From FRANKLIN B. HOUGH, M. D.

Two pieces of WOOD, from the hull of Commodore Perry's flag-ship, the Lawrence. Obtained at Erie, Pennsylvania.

From HENRY VAN RENSSELAER, *of Ogdensburgh.*

COPPER PICKAXE. Found on his farm.

From WILLIAM J. MCALPINE, *Engineer.*

1. A PLASTER MODEL of the UNITED STATES DRY DOCK, at Brooklyn.
2. Fourteen specimens of GRANITE, viz: 6 from Staten Island quarry, New-York; 6 from Quincy quarry, Massachusetts; and 2 from Blue Hill quarry, Maine; being samples of the granite used in the construction of the Dry Dock.
3. A GLASS TUBE, hermetically sealed, containing specimens of the various SOILS through which the excavations were made, stratigraphically arranged; with figures on the tube, indicating the aggregate depth of the excavations, and the proportional thickness of the different strata of earth excavated.
4. A VIAL, containing EARTH, excavated at the depth of sixty-eight and a half feet.

The Dry Dock at Brooklyn, taking into consideration the strength, accuracy and beauty of workmanship, has been pronounced, by competent judges, to be the finest piece of masonry in the world. And the Engineers, not only of this country, but of Europe, have justly denominated it THE GREAT WORK OF THE AGE.

Additional donations from LEWIS H. MORGAN, Esq., *of Rochester.*

50. STONE SKULL CRACKER. From Aurora, Cayuga county. This is the vulgar name. It was fastened in the head of a club, and thus made a formidable weapon.
51. NECKLACE BEAD. From Scipio, Cayuga county.
52. UNFINISHED ARROWHEAD. From Cayuga county.
53. WHITE CHERT ARROWHEAD. From Ledyard, Cayuga county.
54. FRAGMENT of the BOWL of an Ah-so-quä-tä, or PIPE. From Scipio, Cayuga county.
55. SIX ARROWHEADS, or Gä-nuh-yä. From Ledyard and Scipio, Cayuga county.
56. FRAGMENT of a WHITE CHERT ARROWHEAD.
57. TWO TWIST ARROWHEADS. From Ontario county.
58. FRAGMENT of a Ga jih, or EARTHEN BASIN. From Cayuga county.
59. Gä-ne-gä-tä, SENECA MORTAR, for pounding corn.
60. Gä-nih-gä-dä, POUNDER. (Same name as mortar.) Two specimens.
61. Gä-ne-ah, BALL BAT. Two specimens.
62. Wä-a-no, INDIAN BOW. Two specimens.
63. Gä-no, FEATHERED ARROW. Six specimens.
64. Gä-wä-sä, Snow snake. Two specimens.
65. BARK TRAY, or PLATTER.

66. Splint basket. Two varieties.

67. A quantity of white corn. The New-York Indians cultivate this variety of corn principally; which is known, I believe, as the Tuscarora. They put it up and preserve it in bunches.

From the Rev. Duncan Kennedy, D. D., *Albany.*

1. Pequod stone hatchet. From New-England.

[2. Pequod stone hatchet. From New-England. This relic differs from No. 1 in its form, and in the material from which it is constructed.

3. Stone axe. From Westmoreland, Oneida county, New-York.

4. Stone chisel. From Westmoreland, Oneida county, New-York.

Additional articles constituting the Collection of Indian Relics purchased from William H. C. Hosmer, *of Avon, Livingston county, and as described by him.*

34. Stone, of octagonal shape, hollowed out. Supposed to have been used by Indian jugglers. Paint stone ? Found on the Street farm, (so called) which is situated three miles from Avon, in a northwest direction, on the west side of the river, in Livingston county.

35. Stone chisel, (in two pieces) used in excavating canoes. Found near Spanish hill, a few miles from Athens, in Tioga county, New-York. The place has been occupied, for purposes of fortification, and Indian traces abound.

36. Stone deerskin dresser ; and

37. A Fragment of a pipe, (so supposed by Squire.) These implements were found near Fowlerville bridge, in the town of Avon, on a farm of W. W. Wadsworth, (leased by Hamilton, a Scotchman) after the first plowing of a new field, about one mile from the river bed, and three and a half miles, in a southwestern direction, from Avon Springs. They refute the position of O. H. Marshall, that the valley was more recently occupied by the Red man, than the higher ground, or upper terrace.

38. A bone fish spear. Found on the Hurlburt farm, in Avon, four miles from the springs, in a northeast direction. The place where it was found, is known to the inhabitants as Fort Hill. It was unquestionably a Jesuit station. Corn, in a charred state, is found commingled with the subsoil. This place was destroyed by De Nonville, in 1687. Bone crosses have been discovered, and rosaries; also many articles used by the French traders in Indian traffic.

39. A stone implement, with a handle like a mason's smoothing trowel. This implement was found near a spring, on the farm of Ira Pierson, in Avon, about two miles from the village of West Avon, in a southeast direction, while the proprietor was ditching near the spring. Two miles south of the place, on the Conesus outlet, was a Jesuit station.

40. Various beads. These beads were found in various places in the valley of the Genesee—at the Jesuit stations previously referred to—the old Indian burial place, near the Red bridge, that crosses the river one mile west of West Avon village, and a few were found near Fort Niagara, and in the valley of the Susquehannah.

41. Stone deerskin dresser. Found on the farm of Francis Marion Cutler, (brother-in-law of the late Samuel Ward) in West Avon.

42. Stone deerskin dresser. Found on the Wilbur farm.

Note to No. 39. This unique relic is made of the steatitic pyroxene, of Prof. Lewis C. Beck, (Rensselaerite, of Dr. Emmons,) and from its strong resemblance to the specimens of that mineral from Edwards, St. Lawrence county, the material from which it is constructed is undoubtedly from that locality. It was probably used in dressing deerskins, and for smoothing and softening the seams in manufacturing moccasins and other articles made from skins. It evidently belongs to the ante Columbian period.

John Gebhard, Jr.

CATALOGUE OF INDIAN RELICS,

Obtained principally from various parts of Western New-York, by E. G. Squier. *Purchased May*, 1849.

1. **Flint arrowheads.** From Cayuga county, 7 specimens; Monroe county, Livingston county, 2 specimens; Livonia, Livingston county, 2 specimens; vicinity of Buffalo, 1; Ellisburgh, Jefferson county, 1; and 4 from localities not named.
2. **French axes,** (2.) From Cayuga village, Cayuga county.
3. **Indian pestle.** From Cayuga county. New-York.
4. **Copper kettle.** From an Indian grave. Scipio, Cayuga county.
5. **Gunbarrel.** From the site of De Nonville's battle with the Senecas, (1687) near Victor, Ontario county.
6. **Scalping knife.** From the grave of a Cayuga warrior. Scipio, Cayuga county.
7. **Stone axes,** (4.) From Springport, Cayuga county; Adams, Jefferson county; Ellisburgh, Jefferson county; and one locality not named.
8. **Fragments of pottery.** From the site of a Seneca village, Livonia, Livingston county.
9. **Fragments of pottery.** From the site of an old Seneca village, in Mendon, Monroe county.
10. **Pipes, pottery.** From an ancient enclosure, town of Ellisburgh, Jefferson county. 5 boxes.
11. **Pipes, pottery,** &c., as No. 10. 4 boxes.
12. **Terra cottas.** From Le Roy, Genesee county, 2 specimens; Ellisburgh, Jefferson county, 7 specimens; Scipio, Cayuga, 1; and locality not named, 1.
13. **Pottery.** From Ellisburgh, Jefferson county, 3 specimens; and from an ancient village of the Senecas, Livonia, Livingston county, 1 specimen.
14. **Copper knives,** and other metallic articles. From an old Seneca village, Livonia, Livingston county.

15. POTTERY. From an ancient enclosure, Jefferson county, 2 specimens; from Scipio, Cayuga county, 2 specimens; and from Livonia, Livingston county, 2 specimens.
16. Various articles of POTTERY. From an enclosure or mound near Buffalo. 2 boxes.
17. Various articles of POTTERY. From a large mound on Tonawanda island, in Niagara river. Excavated by E. G. Squier, November, 1848.
18. HUMAN REMAINS. From the great mound on Tonawanda island.
19. BONE IMPLEMENTS. From Ellisburgh, Jefferson county, 3 specimens; from Dekay, Jefferson county, 1.
20. STONE AXES. From Buffalo, 1; Livonia, Livingston county, 1; Ellisburgh, Jefferson county, 1.
21. DEPOSITS. From altar mounds of the Mississippi valley.
22. DEPOSITS. From sepulchral mounds of the Mississippi.
23. MORTAR. From the old tower at Newport, Rhode Island.

SCHEDULE OF ARTICLES

Obtained from Indians residing in western New-York, being the product of their own handicraft and manufacture, for the New-York Historical and Antiquarian Collection, under the direction of LEWIS H. MORGAN, *of Rochester.*

Mr. Morgan has furnished the following, and adds, that the name of each article is in the Seneca dialect of the Iroquois language.

(ä, is sounded as in arm — ă, as in at — á, as in ale.)

1. Gä-no-jo-o. Indian drum, used in dances. 3 varieties.
2. Gus-dä-wa-să. Turtle-shell Rattle, used in dances. 2 specimens.
3. Gus-dä-wa-să. Squash-shell Rattle, used in dances. 4 varieties.
4. Gus-dä-wa-să Yen-che-no-hos-ta. Knee Rattle, of deer hoofs. Used in dances. 1 pair.
5. Gä-geh-tä Yen-nis-hä-hos-ta. Arm Bands. 1 pair.
6. Yen-nis-ho-quä-hos-ta. Wrist Bands. 1 pair.
7. Gä-geh-tä Yen-che-no-hos-ta-ta. Knee Bands. 1 pair.
8. Gä-geh-tä. Indian Belt. 3 varieties.
9. Ah-tä-quä-o-weh. Moccasin, for male. 1 pair.
10. The same. Mocassin, for female. 1 pair.
11. Gä-kä-ah. Kilt or Skirt, worn in war dance.
12. Gä-kä-ah. Kilt or Skirt, worn by Indian women.
13. Gise-hă. Leggin, for male. 1 pair.
14. Gise-hă. Leggin, female. 1 pair.
15. Gä-swhen-tä. Necklace.
16. Ya-wa-o-dä-qua. Pin Cushion. 3 varieties.
17. Gä-yä-ah. Work Bag. 5 varieties.
18. Got-gwen-dä. Pocket Book. 6 varieties.
19. Gä-kä. Breech cloth. Used in ball game, foot race, &c.
20. Gä-de-us-ha. Wampum Necklace.
    Da-yu-yä-sont. Name of a cross.
21. Ya-wa-o-dä-quä. Needle Book. 5 varieties.
22. Ga-on-seh. Baby Frame.
23. Gä-o-wä. Bark Tray. 3 specimens.

24. Ah-de-gwas-hă. Hominy Blade, or Soup Stick. 4 specimens.
25. Ah-was-hă. Ear Ring. 1 pair.
26. Gä-jih. Bowl, for a game with peach stones.
27. Gus-ka-eh. Peach Stones. 6 specimens.
28. Gus-ga-e-sa-tä. Deer Buttons, for an Indian game. 8 specimens, or one set.
29. Gä-geh-dä. Javelin or Shooting Stick, for an Indian game. 18 specimens.
30. Yun-ga-sa. Tobacco Pouch. 4 specimens.
31. Gä-ne-gä-tä. Mortar, for pounding corn. 2 specimens.
32. Gä-nih-gä-dä. Mortar Pounder. 2 specimens.
33. Gä-ne-ah. Ball Bat, used in playing an Indian game. 4 specimens.
34. Gä-wä-sä. Snow Snake. 4 specimens.
35. Gä-je-wä. War Club, with ball head. 4 specimens.
36. Gä-ne-u-ga-o-dus-ha. War Club, with deer-horn tooth. 2 specimens
37. O-sque-sont. Tomahawk.
38. Ah-so-quä-tä. Pipe, (made from a *Cyathophyllum.*)
39. Wä-a-no. Indian Bow. 6 specimens.
40. Gä-no. Arrow. 50 specimens.
41. Gä-go-shä. False Face.
42. Gä-weh-ga-ă. Snow Shoe. 3 pairs.
43. O-tä-quă-osh-ha. Snow Shoe, of splint. 1 pair.
44. Gä-sken-dä. Bark Rope, made of Slippery Elm.
45. Gus-hä-ah. Burden Strap, made of Slippery Elm.
46. Gus-hä-ah. Burden Strap, made of Basswood.
47. Ose-gä. Skein of Slippery Elm strings.
48. Ose-hä. Skein of Basswood-bark strings.
49. Ah-da-dä-quä. Indian Saddle.
50. Gä-na-quă. Bark Barrel. Used for beans, dried corn, &c.
51. Gä-oo-wä. Bark Sap Tub. 3 specimens.
52. O-nus-quä Ah-hose-hă. Knot Ball. Used in playing a game. 2 specimens.
53. O-no-ne-ä Gos-ha-dä. Husk Salt Bottle. 2 specimens.
54. O-je-she-wä-tä. Cake of deers' brains and moss, for tanning deerskins.
55. Gä-nuh-sä. Breast-plate of sea shells.
56. Got-kase-hä. Axe-helve.
57. Gä-ga-an-dä. Air Gun.
58. Dä-ya-yä-dă-gä-ne-at-hä. Bow and wheel for striking fire.
59. Gä-gis-dä. Steel, Flint and Punk, for striking fire.

60. Gis-tak-he-ä. Skin Bag. (Speckled Faun.)

61. Gis-tak-he-ä. Skin Bag. (Bearskin.)

62. Tuesh-tä-ga-tas-tä. Tin Breast-plate.

63. Skä-wä-ka. Splint Broom.

64. Ya-o-dä-was-tä. Indian Flute.

65. Ne-us-tase-ah. Basket Sieve. Used for sifting white corn.

66. O-ne-ose-to-wa-nes. Basket Sieve; coarser. For White Flint corn.

67. Ta-gase-hä. Market Basket.

68. Gase-hă. Covered Basket.

69. O-gä-kä-ah. Open-work Basket. 3 specimens.

70. Ga-yuh. Splint Cradle.

71. Gä-nose-hă. Husk and Flag Basket. 4 specimens.

72. Ya-nuh-ta-dä-quä. Toilet Basket.

73. O-gus-ha-ote. Small square Basket. 17 specimens. These baskets are numbered from 1 to 17, inclusive, and contain specimens of the several varieties of corn, beans, squashes, tobacco, dried corn, &c., raised and prepared by the Senecas, viz:

1. O-na-o-ga-ant. White corn.
2. Tic-ne. Red corn.
3. Ha-go-wä. White Flint corn.
4. O-nä-dä. Charred, or roasted corn.
5. O-go-ou-sä. Baked corn.
6. O-si-dä. Long-vine bean.
7. Gweh-dä-ă- O-si-dä. Red bean.
8. Te-o-gä-ga-wă O-si-dä. Speckled bean.
9. Ta-gä-gä-hät. Short-vine bean.
10. Ah-wa-own-dä-go. Red-flower pole-bean.
11. Hä-yoke. Cranberry pole-bean.
12. O-gä-gä-ind. Gray squash.
13. Gä-je-ote. Big-handle squash.
14. Sko-ak. Toad squash.
15. O-ne-ä-sä-ä-weh. Small squash.
16. O-yeh-quä-ä-weh. Indian tobacco.
17. O-so-wa. Parched corn, pounded into flour, with maple sugar.

74. Gä-no. Arrow for air-gun. 2 specimens.

75. O-sque-sont. Tomahawk. Used in the Bear hunt.

76. Da-ya-no-a-quä-tä Gä-ga-neä-sä. Scalping knife. 2 specimens.

77. O-na-o-ga-ant. Two ears of White corn.

78. Tic-ne. Two ears of Red corn.
79. Ho-go-wä. Two ears of White Flint corn.
80. Gus-to-weh. Head Dress.
81. Gä-ger-we-sä Dun-daque-quä-do-quä. New Year's Shovel.
82. To-do-war-she-do-wä. Ribbon for hair.
83. Gä-de-us-ha. Necklace.
84. De-con-deä-da-hust-tă. Belt for female costume.
85. Ah-de-a-dä-we-să. Female upper dress, with silver broaches, &c.
86. Dä-yase-ta-hos-ta. Silver Hat Band.
87. Yen-nis-ho-quä-hos-ta. Silver Wrist Bands. 1 pair.
88. To-an-jer-go-o O-no-no-do. Ground-nuts, (*Apios tuberosa*) from Tonawanda.

(E.)

CATALOGUE

OF THE

REPTILES AND AMPHIBIANS

IN THE

State Cabinet of Natural History,

JANUARY 1, 1850,

REPTILES.

ORDER TESTUDINATA.

FAMILY CHELONIDÆ.

		Zoology—Part III.
Chelonura serpentina,	*Snapping Turtle.* - - - - -	p. 8
Emys picta, - - - - -	*Painted Tortoise.* - - - - -	12
Sternothærus odoratus,	*Musk Tortoise.* - - - - - -	22

ORDER SAURIA.

FAMILY IGUANIDÆ.

Anolius carolinensis,	(*Extra limital.*) - - - - - -	28

FAMILY AGAMIDÆ.

Phrynosoma cornutum,	*Texan Toad, (extra limital.)* - -	31
Tropidolepis undulatus,	*Brown Swift.* - - - - - - -	31

ORDER OPHIDIA.

FAMILY ANGUIDÆ.

Ophisaurus ——,	Not described in De Kay's Zoology.

FAMILY COLUBERIDÆ.

Coluber constrictor,	*Blacksnake.* - - - - - - -	35
Coluber vernalis,	*Grass-snake.* - - - - - - -	40
Coluber occipitomaculatus,	(*Extra limital.*) - - - - - -	41
Tropidonotus sipedon,	*Water-snake.* - - - - - - -	42
Tropidonotus tænia,	*Striped-snake.* - - - - - -	43
Tropidonotus leberis,	*Yellow-bellied snake.* - - - -	45
Tropidonotus de kayi,	*Small Brownsnake.* - - - - -	46
Leptophis saurita,	*Ribbon-snake.* - - - - - - -	47

FAMILY CROTALIDÆ.

Crotalus durissus,	*Northern Rattlesnake.* - - - -	55

AMPHIBIANS.

FAMILY RANIDÆ.

		Zoology—Part IV.
Rana palustris,	*Marsh Frog.* - - - - - -	p. 62
Rana helecina,	*Shad Frog.* - - - - - - -	63

FAMILY SALAMANDRIDÆ.

Salamandra subviolacea,	*Violet-colored Salamander.* - -	74
Salamandra erythronota,	*Red-backed Salamander.* - - -	75
Salamandra granulata,	*Granulated Salamander.* - - -	78
Salamandra rubra,	*Red Salamander.* - - - - - -	80
Salamandra glutinosa,	*Blue-spotted Salamander.* - - -	81
Triton tigrinus,	*Tiger Triton.* - - - - - - -	83
Triton millepunctatus,	*Crimson-spotted Triton.* - - -	84
Triton niger,	*Dusky Triton.* - - - - - - -	85
Triton porphyriticus,	*Gray-spotted Triton.* - - - -	85

(F.)

REPORT

TO THE

REGENTS OF THE UNIVERSITY,

UPON THE ARTICLES FURNISHED THE

THE INDIAN COLLECTION:

BY L. H. MORGAN. DECEMBER 31, 1849.

REPORT.

The Regents of the University having made an appropriation for the enlargement of the Indian Collection, and having entrusted the execution of their resolution with the undersigned, he asks leave to submit the following report.

Within the past century great changes have been wrought among the descendants of the ancient Iroquois. Their primitive fabrics have mostly passed away, and with them many of their original inventions. The substitution of the fabrics of more skillful hands, has led to the gradual disuse of many of their simple arts. At the present moment, therefore, much of the fruit of their inventive capacity is entirely lost. Fragments, indeed, are frequently disentombed from the resting places to which they had been consigned by filial or parental affection; but they are mere vestiges of the past, and afford but a slight indication of their social condition, or of the range of their artisan intellect. It is impossible, therefore, at the present day, to make a full collection of the implements, domestic utensils, and miscellaneous fabrics of our Indian predecessors. Many of their inventions are still preserved among their descendants, who yet reside within our limits; but that portion of them which would especially serve to illustrate the condition of the hunter life, have passed beyond our reach.

In the present advanced condition of our Indian population, a large proportion of their articles are of a mixed character. They rather exhibit the application of Indian ingenuity to fabrics of foreign manufacture, as shown in their reduction into use, than originality of invention. But this class of articles are not without a peculiar interest. They furnish no slight indication of artisan capacity, and will make a species of substitute for those articles which they have displaced, and those inventions which they have hurried into forgetfulness.

The specimens collected, are as diversified as the shortness of the time and the means appropriated would permit. In the accompanying schedule they are classified, under their aboriginal names, into eighty-three distinct classes, and number in all about three hundred. They were obtained among the Senecas, in the western part of the State. It is hoped that they will prove an acceptable addition to the State Collection, and will induce its further enlargement. After the lapse of a few more years, it will be impossible to bring together these silent memorials of our primitive inhabitants. Their social condition has changed greatly, and is changing from day to day; while their simple arts are dropping from their hands one after the other, as they gradually take up agricultural pursuits. It is but just to them, to save from oblivion the fruits of their inventive intellect, however rude and simple they may be, that they themselves may be at least correctly judged. Succeeding generations, also, have a right to require of us these memorials of a departed race; of that race who christened our rivers, lakes, and hills; who maintained them against hostile bands, with a patriotism as glowing as such a fair domain could inspire in the heart of man, but to surrender them at last, and without an equivalent, to a more fortunate possessor.

It is not deemed necessary to describe the articles in detail. A few of the leading specimens will be selected, and some notice given of their origin, manufacture, and uses. Their names are in the Seneca dialect. In their pronunciation the following signs will indicate the several sounds of the vowal a, upon which the greatest variations are made.

(ä, as in arm—ă, as in at—a, as in ale.)

Ah-tä-quä-o-weh, or Moccasin, (for male.) See plate 1.

Moccasin, (for female.) See plate 2.

The moccasin is preëminently an Indian invention, and one of the highest antiquity. It is true to nature in its adjustment to the foot, beautiful in its materials and finish, and durable as an article of apparel. It will compare favorably with the best single article for the protection and adornment of the foot ever invented, either in ancient or modern times. With the sanction of fashion, it would supersede among us a long list of similar inventions. Other nations have fallen behind the Indian, in this one particular at least. The masses of the Romans wore the Calceus Ligneus, or wooden shoe; the masses of Germany and Ireland, and many of the nations of Europe, formerly wore the same.

With the cothurnus, and sandal of the ancients, and the boot of the moderns, the perfection of pedal inventions, the moccasin admits of no unfavorable comparison. It deserves to be classed among the highest articles of apparel ever invented, both in usefulness, durability and beauty.

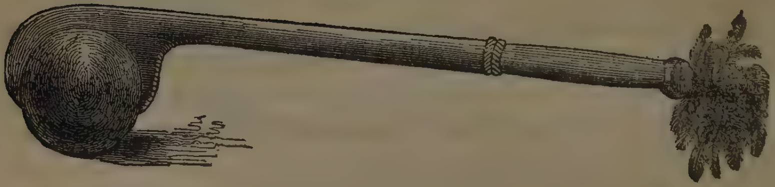
The mocassin is made of one piece of deerskin. It is seamed up at the heel, and also in front, above the foot, leaving the bottom of the moccasin without a seam. In front the deerskin is gathered, in place of being crimped; over this part porcupine quills or beads are worked, in various patterns. The plain moccasin rises several inches above the ankle, like the Roman cothurnus, and is fastened above the ankle with deer strings; but usually this part is turned down, so as to expose a part of the instep, and is ornamented with bead work, as represented in the plate. A small bone near the ankle joint of the deer, has furnished the moccasin needle from time immemorial; and the sinews of the animal, the thread. These bone needles are found in the mounds of the West, and beside the skeletons of the Iroquois, where they were deposited with religious care. This isolated fact would seem to indicate an affinity, in one act at least, between the Iroquois and the mound builders, whose name, and era of occupation and destiny, are entirely lost.

In ancient times the Iroquois used another shoe, made of the skin of the elk. They cut the skin above and below the *gambrel* joint, and then took it off entire. As the hind leg of the elk inclines at this joint nearly at a right angle, it was naturally adapted to the foot. The lower end was sewed firmly with sinew, and the upper part secured above the ankle with deer strings.

In connection with this subject is the art of tanning deer skins, as they still tan them after the ancient method. It is done with the brain of the deer, the tanning properties of which, according to a tradition, were discovered by accident. The brain is mingled with moss, to make it adhere sufficiently to be formed into a cake, after which it is hung up by the fire to dry. It is thus preserved for years. When the deerskin is fresh, the hair, and also the grain of the skin are taken off, over a cylindrical beam, with a wooden blade or stone scraper. A solution is then made by boiling a cake of the brain in water, and the moss, which is of no use, being removed, the skin is soaked a few hours in the solution. It is then wrung out and stretched, until it becomes dry and pliable. Should it be a thick one, it would be necessary to repeat the process until it becomes thoroughly penetrated by the solution. The skin is still porous and easily torn. To correct both, a smoke is made, and the skin placed over it in such a manner as to enclose it entirely. Each side is smoked in this way until the pores are closed, and the skin has become thoroughly toughened, with its color changed from white to a kind of brown. It is then ready for use.

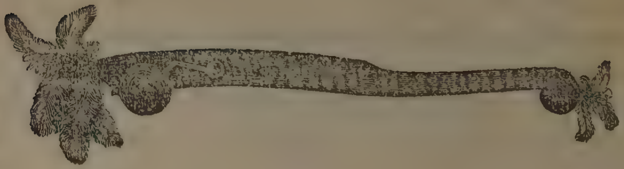
They also use the brain of other animals, and sometimes the back bone of the eel, which, pounded up and boiled, possesses nearly the same properties for tanning. Bear skins were never tanned. They were scraped until softened, after which they were dried, and used without removing the hair, either as an article of apparel, or as a mattress to sleep upon.

Gä-je-wä, or WAR CLUB.



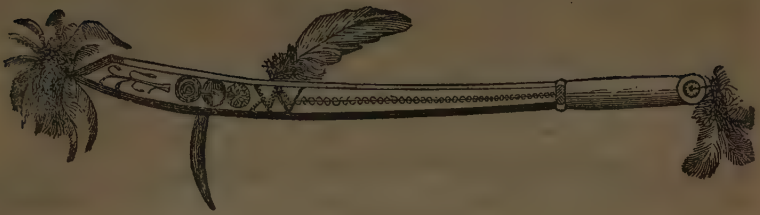
2 feet 2 inches.

WAR CLUB, smaller size.



Before the tomahawk came into use among the Iroquois, their principal weapons were the bow, the stone tomahawk, and the war club. The Gä-je-wä was a heavy weapon, usually made of ironwood, with a large ball of knot at the head. It was usually about two feet in length, and the base five or six inches in diameter. In close combat it would prove a formidable weapon. They wore it in the belt, in front.

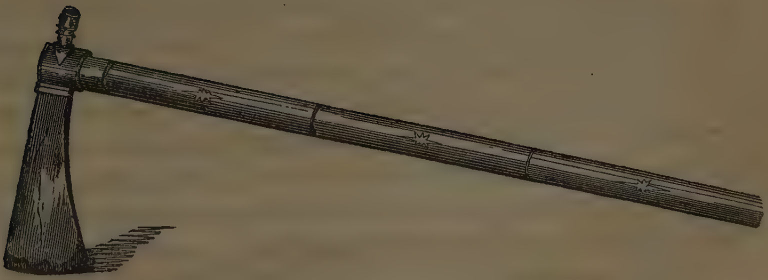
Gä-ne-u-ga-o-dus-ha, or Deer-horn War Club.



2 feet 4 inches.

This species of war club was also much used. It was made of hard wood, elaborately carved, painted, and ornamented with feathers at the ends. In the lower edge, a sharp-pointed deer's horn, about four inches in length, was inserted. It was thus rendered a dangerous weapon in close combat, and would inflict a deeper wound than the former. They wore it in the girdle. In the collection are six war clubs, of the two kinds above described. One of them is a light article, designed for the war dance.

O-sque-sont, or Tomahawk.

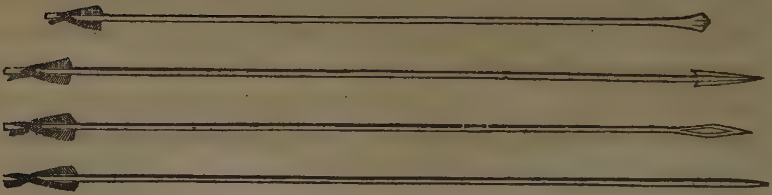


The tomahawk succeeded the war club, as the rifle did the bow. With the invention of this terrible implement of warfare the Red man had nothing to do, except in having it so fashioned as to be adapted to his taste and usage. The tomahawk is known as widely as the Indian, and the two names have become apparently inseparable. They are made of steel, brass, or iron. The choicer articles are surmounted by a pipe-bowl, and have a perforated handle, that they may answer the double purpose of ornament and use. In such the handle, and often the blade itself, are richly inlaid with silver. It is worn in the girdle, and behind the back, except when in actual battle. They used it in close combat with terrible effect, and also threw it with unerring certainty at distant objects, making it revolve in the air in its flight. With the Indian, the tomahawk is the emblem of war itself. To bury it, is peace; to raise, is to declare the most deadly warfare.

Wä-a-no, or Bow.

4 feet.

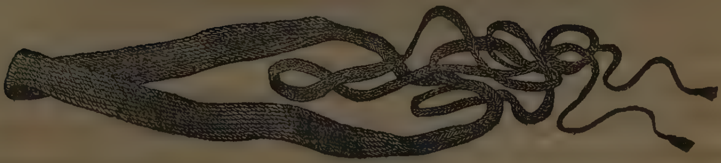
Gä-no, or Arrow.



3 feet.

In archery, the Indian has scarcely been excelled. With a quick eye and a powerful muscle, he could send the arrow as unerringly as the archers of Robin Hood. It may be claimed as an Indian invention, although the bow and the arrow have been used by all nations in their primitive state. The Indian bow is usually from three and a half to four and a half feet in length, and so difficult to spring, that an inexperienced person could scarcely bend it sufficiently to set the string. To draw the string back an arrow's length when set, could only be done by practice, superadded to the most powerful muscular strength. An arrow thus sent would strike its object with fearful velocity. The arrow is feathered at the small end with a twist, to make it revolve in its flight. It gives to its motion uniformity and quickness, and, doubtless, suggested the idea of the twist in the rifle barrel, by which the ball is made to revolve in the same manner. The English and Scottish archer feathered his arrow, but without this peculiarity. Three feathers were also used, which were set parallel with each other, and with the arrow, but upon one side. Originally the Indian arrow was pointed with a flint or chert head, which would make it penetrate deeply any object at which it was directed. With such an arrow it was an easy matter to bring down the deer, the wild fowl, or the warrior himself. Skeletons have been disentombed having the skull penetrated by an arrowhead of this description, with the flint head itself still in the fracture, or entirely within the skull. In Oregon, and on the upper Mississippi, the Indian arrow is still pointed with flint. Thus it was with the Iroquois, until the bow was laid aside for the rifle. Arrow heads of this description are still scattered over the whole surface of the State. Six bows, of different sizes, and some bundles of feathered arrows, will be found in the collection. With Indian youth, the bow and arrow is still a favorite source of amusement.

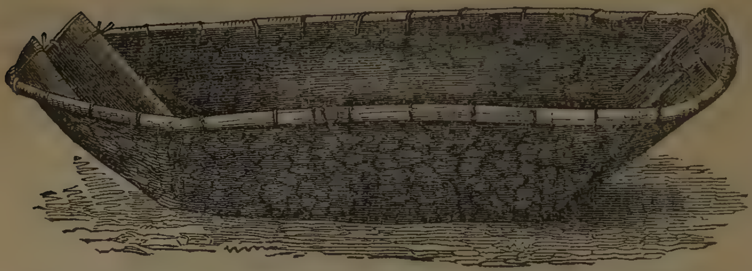
Gus-hä-ah, or BURDEN STRAP.



Rope-making, from filaments of bark, is also an Indian art. The deer string answers a multitude of purposes in their domestic economy; but it could not supply all necessities. The bark rope (Gä-sken dä) has been fabricated among them from time immemorial. In its manufacture they use the bark of the slippery elm and the basswood. Having removed the outer surface of the bark, they divide it into narrow strips, and then boil it in ashes and water. After it is dried it is easily separated into small filaments, the strings running with the grain several feet without breaking. These filaments are then put up in skeins (specimens of which are furnished) and laid aside for use. Basswood makes the most pliable rope; it is soft to the touch, can be closely braided, and is very durable. The burden strap is worn around the forehead and lashed to a litter, which is borne by Indian women on their back. It is usually about fifteen feet in length, and braided into a belt in the centre, three or four inches wide. Several specimens are furnished, one of which is new, and neatly manufactured. A clothes line, of three-strands bark rope, about forty-feet in length, is also among the articles. This art, like many others, is falling into disuse. But few Indian families now provide themselves with skeins of bark thread, or make any use of ropes of this description.

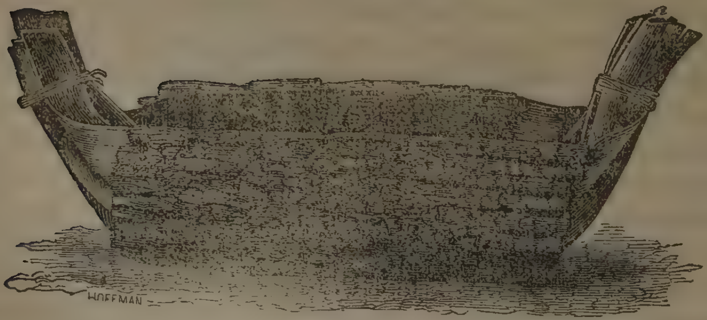
A bark barrel, (Gä-na-quă) which has been used about thirty years, will also be found with the other specimens. It is stitched up the side, has a bottom and lid, and shows no signs of decay. Such barrels are used to store dried corn, fruit, beans, &c.

Gä-o-wä, or BARK TRAY.



Trays of this description are found in every Indian family. They serve a variety of purposes, but are chiefly used for kneading, or rather preparing corn bread. A strip of elm bark, of the requisite dimensions, is rounded and turned up on the sides and at the ends, so as to form a shallow concavity; around the rim, both outside and in, splints of hickory are adjusted, and stitched through and through with the bark. It thus makes a durable and convenient article for holding corn meal, for preparing corn bread, and for many other purposes.

Gä-oo-wä, or BARK SAP TUB.



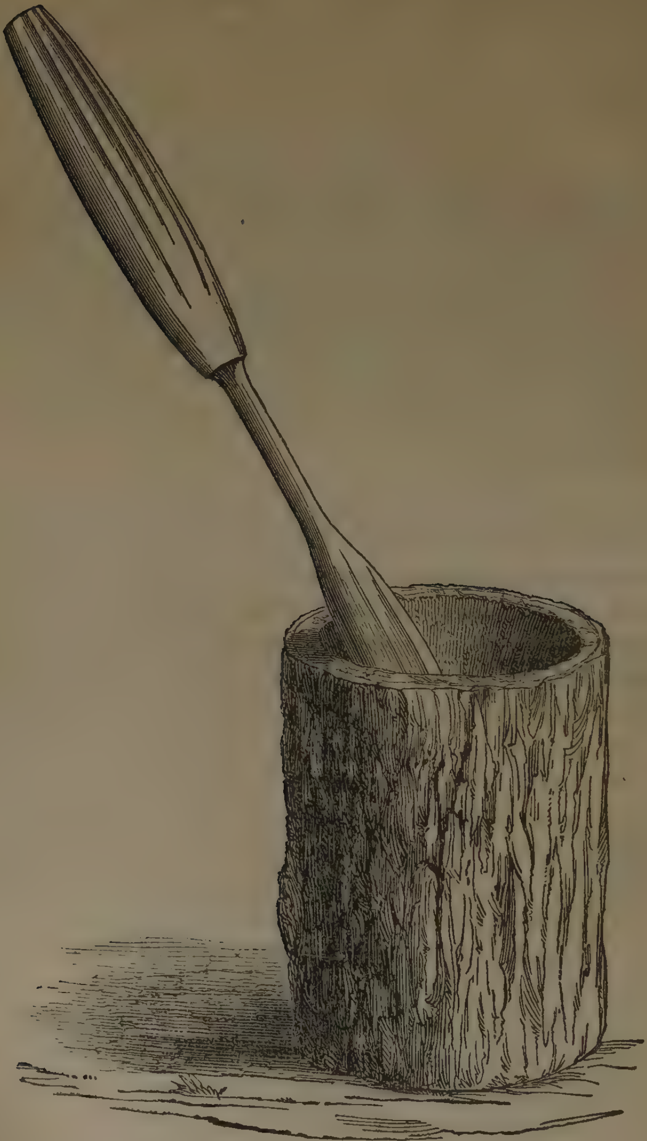
Our Indian population have been long in the habit of manufacturing sugar from the maple. Whether they learned the art from us, or we received it from them, is uncertain. One evidence, at least, of its antiquity among them, is to be found in one of their ancient religio festivals, instituted to the maple. It is called the Maple Dance, (O-tä-de-none-neo-wa-tä) which signifies "Thanks to the Maple." In the spring season, when the sap begins to flow, it is still regularly observed by the present Iroquois. The sap tub is a very neat contrivance, and surpasses all articles of this description. Our farmers may safely borrow, in this one particular, and with profit substitute this Indian invention for the rough and wasteful trough of their own contrivance.

A strip of bark about three feet in length, by two in width, makes the tub. The rough bark is left upon the bottom and sides. At the point where the bark is to be turned up to form the ends, the outer bark is removed; the inner rind is then turned up, gathered together in small folds at the top, and tied around with a splint. It is then ready for use, and will last several seasons. Aside from the natural fact that the sap would be quite at home in the bark tub, and its flavor preserved untainted, it is more durable and capacious than the wooden one, and more readily made.

Gä-ne-gä-tä, Gä-nih-gä-dä, or Corn Mortar and Pounder.

The Senecas use three varieties of corn: the White, (O-na-o-ga-ant) the Red, (Tic-ne) and the White Flint, (Ha-go-wä.) Corn is, and always has been, their staple article of food. When ready to be harvested, they pick the ears, strip down the husks, and braid them together in bunches, with about twenty ears in each. They are then hung up ready for use. The white flint ripens first, and is the favorite corn for hominy; the red next, and is used principally for charring and drying; the white last, and is the favorite corn of the Indians; it is used for bread, and supplies the same place with them that wheat does with us. They shell their corn by hand, and pound it into flour in wooden mortars. In two hours from the time the corn is taken from the ear it is ready to eat, in the form of unleavened bread. It is hulled in the first instance, by boiling in ashes and water; after the outer skin is thus removed from each kernel, it is thoroughly washed, and pounded into flour or meal in a mortar, of which a representation will be found on the next page, (76.) Having been passed through a sieve basket, to remove the chit and coarser grains, it is made into loaves or cakes about an inch in thickness, and six inches in diameter; after which they are cooked by boiling them in water. Upon bread of this description, and upon the fruits of the chase, the Indian has principally subsisted from time immemorial.

Mortar and Pounder.



Mortar, 2 feet. Pounder, 4 feet.

The practice of charring corn is of great antiquity among the Red race. In this condition it is preserved for years without injury. Caches or pits of charred corn, have been found in the vicinity of ancient works and deserted settlements, in various parts of the country. Many of these are supposed to reach back to the period of the Mound builders. How far this custom prevailed among the Iroquois, cannot with certainty be determined; neither do we know whether those caches, which are still discovered in various parts of the State, are to be ascribed to them. It is certain, however, that they were in the habit of charring corn, to preserve it for domestic use. The Senecas still do the same. For this use the red corn is preferred. When green the corn is picked, and roasted in the field before a long fire, the ears being set up on end in a row. It is not charred or blackened entirely, but roasted sufficiently to dry up the moisture in each kernel. The corn is then shelled, and dried in the sun. In this state it is chiefly used by hunting parties, and for subsistence on distant excursions. Its bulk and weight having been diminished about half by the two processes, its transportation became less burdensome. The Red races seldom formed magazines of grain, to guard against distant wants. It is probable, therefore, that these pits of charred corn owe their origin to the sudden flight of the inhabitants, who buried their dried corn because they could not remove it, rather than to a desire to provide against a failure of the harvest.

There is another method of curing corn in its green state, quite as prevalent as the former. The corn is shaved off into small particles, and having been baked over the fire in pans or earthen dishes, it is then dried in the sun. In this condition it is preserved for winter use.

A favorite article of subsistence is prepared from the charred corn. It is parched a second time, after which, having been mixed with about a third part of maple sugar, it is pounded into a fine flour. This is carried in the bearskin pocket of the hunter, and upon it alone he subsists for days together. It was also the principal subsistence of the war party on distant expeditions. Its bulk is reduced to the smallest possible compass, and it is so light that the Indian could carry, without inconvenience, sufficient for a long adventure. When we consider the rapidity of their journeys, and their powers of enduring abstinence, it becomes easy to understand how the war party could leave the valley of the Genesee, make an inroad upon the Cherokees of the south, and return, relying almost entirely upon this species of subsistence. A basket of each of the three varieties of corn, of the two species of dried corn, and of this flour, will be found among the specimens.

This noble grain, one of the gifts of the Indian to the world, is destined eventually to become one of the staple articles of human consumption. Over half of our republic lies within the embrace of the tributaries of the Mississippi. Upon their banks are the corn-growing districts of the country; and there, also, at no distant day, will be seated the millions of our race. Experience demonstrates that no people can rely wholly upon exchanges for the substance of their breadstuffs, but that they must look chiefly to the soil they cultivate. This law of production and consumption, is destined to introduce the gradual use of corn flour, as a partial substitute at least, for its superior rival, in those districts where it is the natural product of the soil. In the southern portions of the country this principle is already attested, by the fact that corn bread enters as largely into human consumption as wheaten. Next to wheat, this grain, perhaps, contains the largest amount of nutriment. It is the cheapest and surest of all the grains to cultivate; and is, also, the cheapest article of subsistence known among men. Although wheat can be cultivated in nearly all sections of the country; although its production can be increased to an unlimited degree by a higher agriculture; we have yet great reason to be thankful for this secondary grain, whose reproductive energy is so unmeasured as to secure the millions of our race, through all coming time, against the dangers of scarcity or the pressure of want.

O-yeh-quä-ä-weh, or Indian Tobacco.

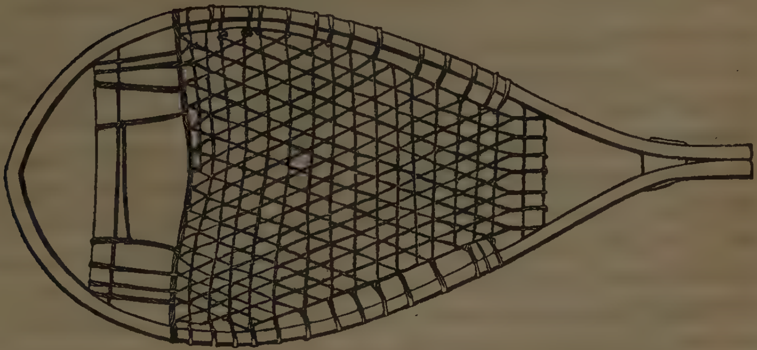
Tobacco is another gift of the Indian to the world; but a gift, it must be admitted, of questionable utility. We call both corn and tobacco the legacy of the Red man; as these indigenous plants, but for his nurture and culture through so many ages, might have perished, like other varieties of the fruits of the earth. Many of our choicest fruits owe their origin to vegetable combinations entirely fortuitous. They spring up spontaneously, flourish for a season and become extinct, but for the watchful care of man. Nature literally pours forth her vegetable wealth, and buries beneath her advancing exuberance the products of the past. But few of the fruits and plants, and flowers of the ancient world, have come down to us unchanged; and still other plants, perhaps, have perished unknown in the openings of the past, which contained within their shrivelled and stinted foliage, the germ of some fruit, or grain, or plant, which might have nourished or clothed the whole human family. We may therefore, perchance, owe a debt to the Indian, in these particulars, beyond our utmost acknowledgments.

The Senecas still cultivate tobacco. Their name signifies "*The only Tobacco*," because they considered this variety superior to all others. A specimen is furnished. It is raised from the seed, which is sown or planted in the spring, and requires but little cultivation. The leaves are picked early in the fall, when their color first begins to change, and when dried are ready for use. After the first year it grows spontaneously, from the seed shed by the plant when fully ripened. If the plants become too thick, which is frequently the case, from their vigorous growth, it becomes necessary to thin them out, as the leaves diminish in size with their increase in number. This tobacco is used exclusively for smoking. The custom of chewing the cud, appears to have been derived from us. Although this tobacco is exceedingly mild, they mingle with it the leaves of the sumac, to diminish its stimulating properties. The sumac has been used by the Indian to temper tobacco from time immemorial.

Until within a few years, the Iroquois used the wild potato as an article of food. It still grows spontaneously upon the western reservations, and is usually about the size of a hen's egg. They never cultivated this potato, but gathered it in its wild state.

Six varieties of the bean, and four of the squash, are also furnished. Which varieties were of original cultivation and indigenous, the writer cannot state.

Gä-weh-ga-ă, or Snow Shoe.

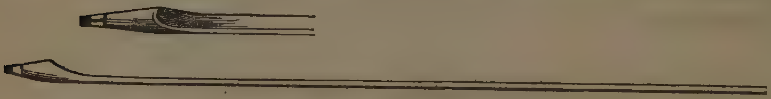


2 feet 10 inches.

The snow shoe is an Indian invention. Upon the deep snows which accumulate in the forest, it would be nearly impossible to travel without them. They were used in the hunt, and in warlike expeditions undertaken in the season of winter.

The snow shoe is nearly three feet in length, by about sixteen inches in width. A rim of hickory, bent round with an arching front, and brought to a point at the heel, constitutes the frame, with the additio of cross pieces to determine its spread. Within the area, with the exception of an opening for the toe, is woven a net work of deer strings, with interstices about an inch square. The base of the foot is lashed at the edge of this opening with thongs, which pass around the heel for the support of the foot. The heel is left free to work up and down, and the opening is designed to allow the toe of the boot to descend below the surface of the shoe, as the heel is raised in the act of walking. It is a very simple invention, but exactly adapted for its uses. A person familiar with the snow shoe can walk as rapidly upon the snow, as without it upon the ground. The Senecas affirm that they can walk fifty miles per day upon the snow shoe, and with much greater rapidity than without it, in consequence of the length and uniformity of the step. In the bear hunt, especially, it is of the greatest service, as the hunter can speedily overtake the bear, who, breaking through the crust, is enabled to move but slowly.

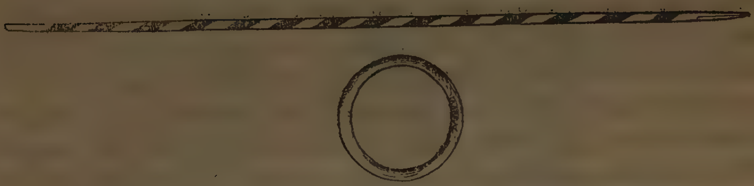
Gä-wä-sä, or SNOW SNAKE.



Side section 6 feet, ¼ inch in thickness; bottom section ⅞ to ½ inch in width.

Among the amusements of the winter season, in Indian life, is the game with Snow Snakes. The snakes are made of hickory, and with the most perfect precision and finish. They are from five to seven feet in length, about a fourth of an inch in thickness, and gradually diminishing from about an inch in width at the head, to about half an inch at the foot. The head is round, turned up slightly, and pointed with lead. They are thrown with the hand, by placing the fore finger against the foot, and skim along upon the snow crust nearly with the speed of an arrow, and to a much greater distance. The game itself is rendered exciting by the numbers engaged, and the amount wagered upon the result. As in all Indian games, the people divide by tribes, certain tribes playing against the others. A limited number are chosen to play the game from each side. The snake which runs the farthest wins, and a count is made by each snake which leads all upon the opposite side. A minute description is necessary, to a full understanding of the game, but enough has been said to designate the uses of the article. Specimens are furnished.

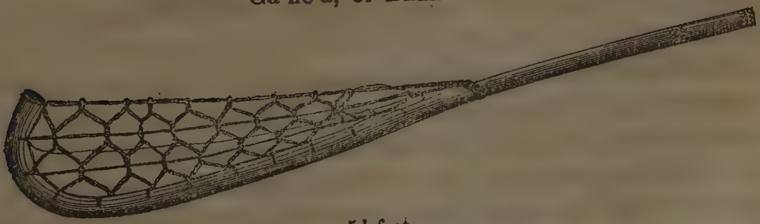
Gä-geh-dä, or JAVELIN.



Javelin 5½ feet, ½ inch in diameter. Ring 6 inches in diameter.

The game of Javelins, or shooting sticks, is also of Indian invention. It is a simple game, depending upon the dexterity with which the javelin is thrown at the ring, as it rolls upon the ground. The javelin itself is the forfeit, and the game is lost when all the javelins upon one side are won. As in other Indian games, the people array themselves according to their tribal divisions; the Wolf, Bear, Turtle, and Beaver tribes, playing against the Deer, Snipe, Heron, and Hawk. From fifteen to thirty on a side are chosen, each taking from three to six javelins. The parties having stationed themselves several rods apart, upon opposite sides of a given line, a hoop or ring is rolled by one party in front of the other, who throw their javelins at the ring as it passes. If the hoop is struck by one of them, the other party are required to stand in the place of the successful person and throw all their javelins in succession at the ring. Those which hit are saved, and those which fail are handed over to the other party, who in turn throw them at the ring. Of this number, those which hit the hoop are won finally, and laid out of the play; the balance are returned to their original owners. The successful party then rolls back the ring, and the game is thus continued until all the javelins upon one side are forfeited.

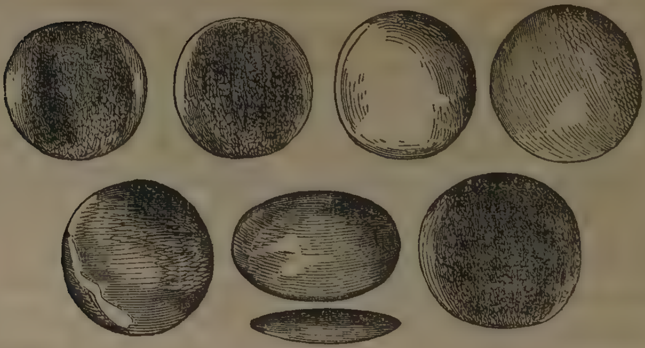
Gä-ne-ä, or BALL BAT.



5½ feet.

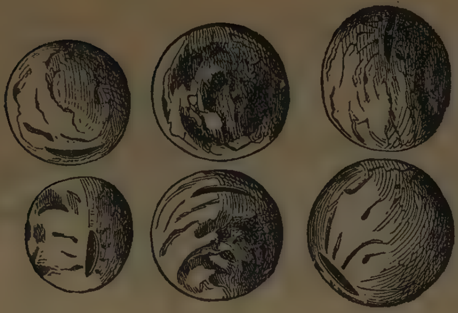
This is the great game of the Indians. It is also of the highest antiquity, universal among the Red races, and played with a zeal and enthusiasm which would scarcely be credited. In playing it they denude themselves entirely, with the exception of the Gä-kä, or waist cloth, each one holding a bat, of the species represented in the figure. Gates are erected about sixty rods apart, upon opposite sides of a field, and the point in the game is, for each party to carry the ball through their own gate. Usually they have from six to eight on a side to play the game, who are surrounded by a concourse of spectators. Commencing at the centre, each party strives to direct the ball towards their own gate, knocking it upon the ground or through the air; but more frequently taking it up upon the deerskin net-work of the ball bat, and carrying it in a race towards the gate. When an opposite player strikes it ahead of the runner, the latter throws the ball over the head of the former towards the gate. Oftentimes the play is contested with so much animation, that the ball is recovered at the edge of the gate; and finally, after many shifts in the tide of success, is carried to the opposite side. The game is usually from five to seven, and requires from noon until evening to determine it, each trial is conducted with so much ardor and diversity of success. Specimens of the ball bat are furnished.

Gus-ga-e-sa-tä, or DEER BUTTONS.

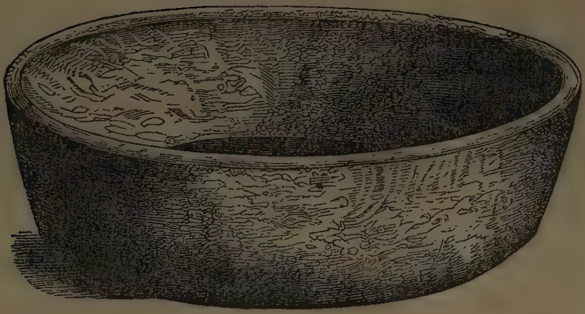


A set of deer buttons will also be found among the articles. This is a fireside game. Eight buttons, an inch in diameter, are made of deer bone, and blackened upon one side. They are thrown with the hand, the count depending upon the number of faces which turn up of one color. If they all come up white, for instance, it counts twenty; if seven of the eight, it counts four; if six, two. These are the only counts. Fifty beans make the bank, and the game continues until one party has won them.

Gus-ka-eh, or Peach Stones.



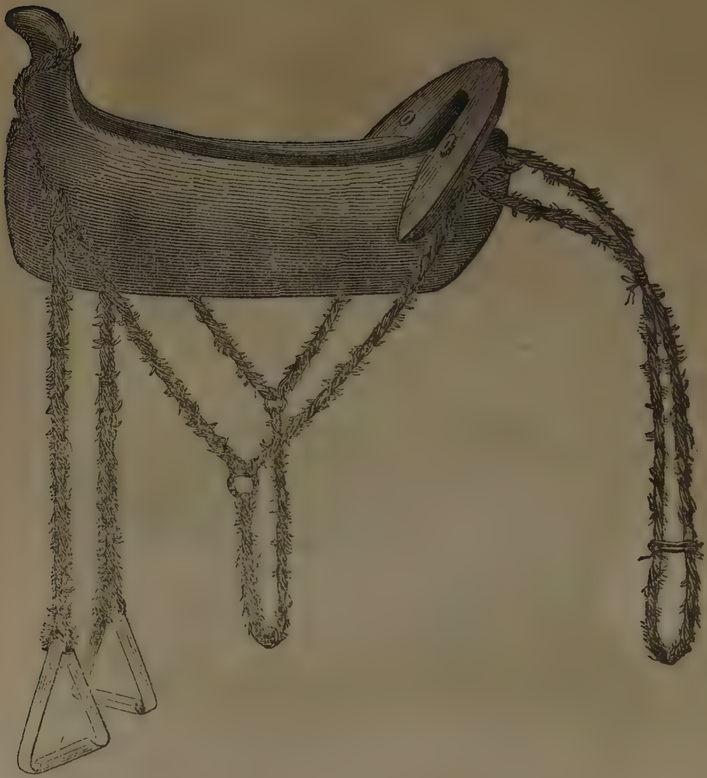
Gä-jih, or Bowl.



Another favorite game of the Iroquois is played with a bowl and peach stones. A dish, about a foot in diameter, is carved out of a knot, or made of earthen. Six peach stones are then filed or cut down into an oval form, reducing them about half in size; after which they are burned slightly upon one side, to blacken them. These are shook in the bowl, and the count depends upon the number which turn up of the same color. This game is one of their amusements after holding a council. They divide by tribes, as in other games, and bet largely upon the result. It is played by persons selected on each side, who are skilled in the game. The Iroquois ascribe its invention to To-do-dä-ho, the renowned sachem of the Onondagas, who flourished at the time of the formation of the league.

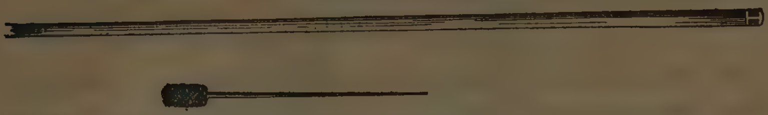
Betting upon all Indian games, when played by tribe against tribe, was as common among the Iroquois, as betting at races by the whites. No restraint whatever was laid upon this practice, and from their fondness for excitement, it frequently led to the most reckless indulgence. It not unfrequently happened that the Indian gambled away every hing which he possessed, his rifle, his tomahawk, and even his blanket.

Ah-da-dä-quä, or INDIAN SADDLE.



This is an Indian invention, but came originally from the west. It closely resembles the saddle of the native Mexicans in its general plan, but its pommel is not as high, and its side pieces are longer. It is still used among the Iroquois, and among the Indian tribes of the west. The frame is made of four pieces of wood, firmly set together, over which is a covering of raw hide. The side pieces are about eighteen inches in length, six in width, and about an inch in thickness at the centre, but terminating in a sharp edge above and below. In front the pommel rises about five inches above the side pieces. It is made of a stick having a natural fork, which is so adjusted as to embrace the side pieces, and determine the spread of the saddle. Another piece, in the same manner, embraced the side pieces at the opposite end, rising several inches above, and descending nearly to their lower edges. These side pieces at the top, are about three inches apart, leaving a space for the back-bone of the horse. The fastenings of the saddle, including those of the stirrup, were originally of ropes, made of Buffalo's hair. Triangular stirrups, of wood, completed the trappings of the saddle. As the Iroquois seldom made use of the Indian horse, the saddle with them was rather an accidental, than a usual article. A specimen, of Seneca manufacture, will be found among the articles.

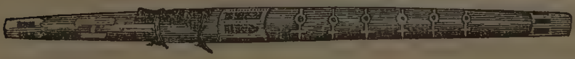
Gä-ga-an-dä, or Air Gun; and Gä-no, or Arrow.



Air gun, 6 feet. Arrow, 2½ feet.

The air gun is claimed as an Indian invention, but with what correctness the writer cannot state. It is a simple tube or barrel, about six feet in length, above an inch in diameter, and having a uniform bore, about half an inch in diameter. It is made of alder, and also of other wood, which is bored by some artificial contrivance. A very slender arrow, about two and a half feet in length, with a sharp point, is the missile. Upon the foot of the arrow, the down or floss of the thistle is fastened on entire, with sinew. This down is soft and yielding, and when the arrow is placed in the barrel, it fills it air tight. The arrow is then discharged by the lungs. It is used for bird shooting.

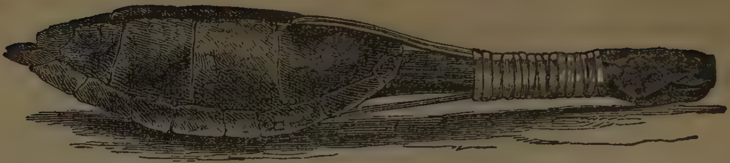
Ya-o-dä-was-tä, or Indian Flute.



1½ feet.

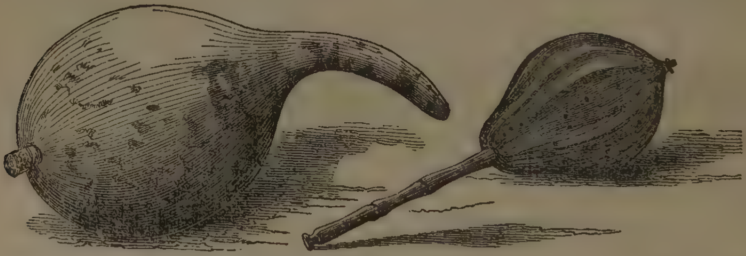
This instrument is unlike any known among us, but it clearly resembles the clarionet. Its name signifies "a blow pipe." It is usually made of red cedar, is about eighteen inches in length, and above an inch in diameter. The finger holes, six in number, are equidistant. Between them and the mouth-piece, which is at the end, is the whistle, contrived much upon the same principle as the common whistle. It makes six consecutive notes, from the lowest, on a rising scale. The seventh note is wanting, but the three or four next above are regularly made. This is the whole compass of the instrument. As played by the Indians, it affords a species of wild and plaintive music. It is claimed as an Indian invention.

Gus-dä-wa-să, or RATTLE.



Turtle-shell Rattle.

The turtle-shell rattle is used in the dance, both as an accompaniment to the singing, and to mark the time. In all of their dances, except the war dance, the singers are seated in the centre of the room, and the dancers pass around them in an elliptical line. They strike the rattle upon the bench, in beating time, as frequently as thrice in a second, and accompany it with singing. After removing the animal from the shell, a handful of flint corn is placed within it, and the skin sewed up. The neck of the turtle is stretched over a wooden handle.

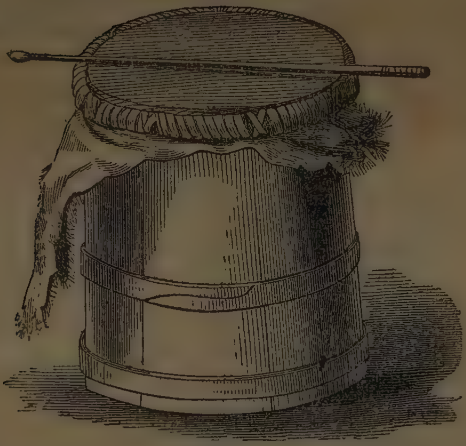


Squash-shell Rattle.

As an accompaniment for singing, the squash-shell rattle is also used. Corn is placed within the hollow shell, and the sound of the rattle varies with its size. In their songs for the dead, it is chiefly used. Frequently twenty of these rattles are heard in one song, each one giving a different note, and the whole together making a very strange substitute for music.

The Iroquois have about twenty distinct dances, a few of them, as the war dance, are performed by select dancers, who dress in full costume and paint for the occasion. A few, also, are exclusively for the females, but in the most of them all participate. The thanksgiving, or religious dance, (O-sto-weh-go-wä) is the most spirited and striking in the list; but the war dance (Wä-säs-seh) is the greatest favorite. In this dance the drum is chiefly used.

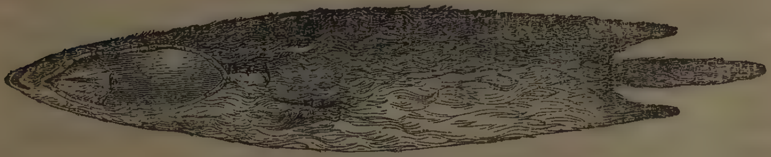
Gä-no-jo-o, or INDIAN DRUM.



1 foot.

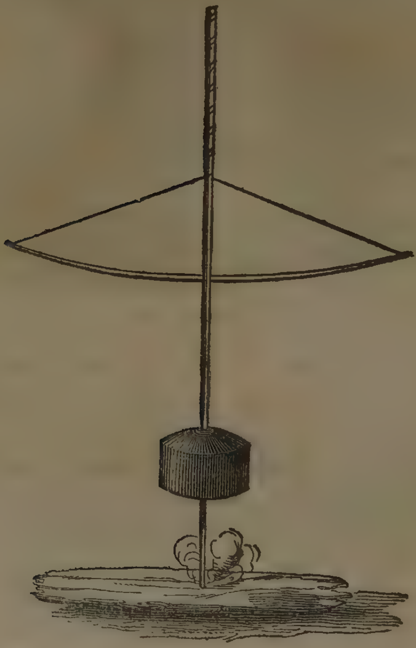
Over one head of the drum the skin of some animal is stretched to its utmost tension, and held firmly by a hoop. Vocal music is essential to every Indian dance; the drum being used to mark time, and as an accompaniment. These primitive amusements are still maintained by a certain portion of the present Iroquois, with undiminished interest. Their social intercourse still takes on this form, and scarcely a week passes, in the winter season, without a dance. They are eminently calculated to keep alive their Indian sympathies and notions; and for this reason, the first efforts of their missionaries are, with great propriety, directed to their suppression. There is a wildness in the music and excitement of the dance, exactly attuned to the nature of the Indian; and when he loses his relish for the dance, he has ceased to be an Indian.

Yun-ga-sa, or TOBACCO POUCH.



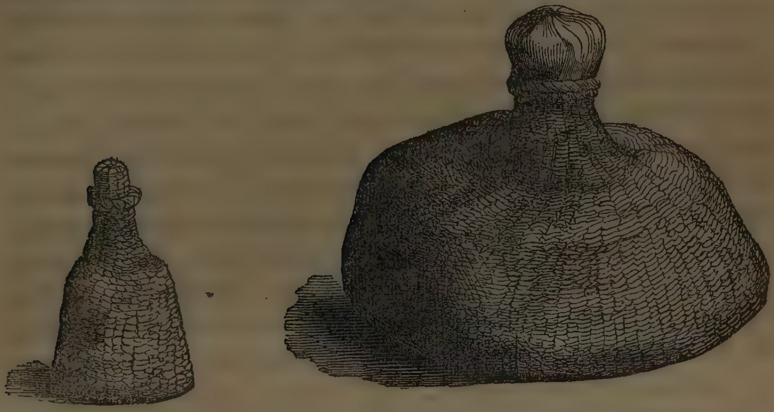
The tobacco pouch is made of the skin of some small animal, which s taken off entire. It was anciently an indispensable article, and was worn in the girdle. Four specimens are furnished, one of white weasel, one of squirrel, one of mink, and one of fisher skin. The latter was worn many years by Johnson, (Sose-ha-wä) a nephew of Red Jacket, and now one of the most distinguished living chiefs of the Senecas.

Dä-ya-yä-dă-gä-ne-at-hä, or BOW AND SHAFT, for striking fire.



This is an Indian invention, and of great antiquity. Its rudeness may excite a smile, in this day of lucifer matches, but yet the step backward to the steel and flint is about the same, as from the latter to the contrivance in question. Not knowing the use of metals or of chemicals, it was the only method of creating fire known to the Red man. It consisted of an upright shaft, about four feet in length and an inch in diameter, with a small wheel set upon the lower part, to give it momentum. In a notch at the top of the shaft was set a string, attached to a bow about three feet in length. The lower point rested upon a block of dry wood, near which are placed small pieces of punk. When ready to use, the string is first coiled around the shaft, by turning it with the hand. The bow is then pulled downward, thus uncoiling the string, and revolving the shaft towards the left. By the momentum given to the wheel, the string is again coiled up in a reverse manner and the bow again drawn up. The bow is again pulled downward, and the revolution of the shaft reversed, uncoiling the string, and recoiling it in reverse as before. This alternate revolution of the shaft is continued, until sparks are emitted from the point where it rests upon the piece of dry wood below. In a moment's time sparks are produced by the intensity of the friction, and ignite the punk, which speedily furnishes a fire.

O-no-ne-ä Gos-ha-dä, or Corn-husk Salt Bottle.



Several varieties of basket work will be found among the articles. In this useful art the Indian women excel. They are made with a neatness, ingenuity and simplicity, which deserve the highest praise. Among the number are two sieve baskets, used for sifting corn meal. Another variety is made of corn-husks and flags, an ingeniously manufactured basket, which is seldom met with. Two corn-husk bottles for salt, are also furnished.

Gä-de-us-ha, or Necklace. See plate 3, fig. 2.

This necklace is made of silver and wampum beads. The latter are of a dark color, and are cut from a species of sea shell. Beads of this description are held in the highest estimation. In strings of wampum beads, the laws of the ancient confederacy of the Iroquois were recorded. According to their method of expressing the idea, the law was "talked into the string of wampum," and it became ever afterwards the visible record of the law itself. By an original law of the league, a sachem of the Onondagas (Ho-no-we-nă-to) was made the hereditary keeper and interpreter of these strings; and to this day, the Onondaga sachem who holds this title, performs this duty.

A silver cross is also attached to this necklace. The Indian women wear a profusion of silver ornaments, and among them the cross is frequently conspicuous.

In their costumes for the war dance, the Iroquois indulged their taste for finery and ornament to its fullest extent. Some of them would excite admiration by the exactness of their finish and adjustment, the neatness of the materials, and the striking appearance of the whole, as seen in the graceful movements of the dance. They are diversified in their materials and ornaments, but yet consist of the same articles of apparel. Two costumes are furnished. One is that of a warrior, and was designed for the dance. The other is the ordinary dress of the Indian female. If the fabrics of which they are composed were of their own manufacture exclusively, it would add much to their interest; but since the intercourse of the Iroquois commenced with the whites, they have laid aside their deerskin apparel, and substituted materials, in fact, of our own manufacture. Since we have known them, however, their costumes have been of this description. No change has been made of the articles of apparel themselves, but the deerskin has been laid aside for the broadcloth, the bearskin blanket for the woolen, and the porcupine quill for the bead.

Much taste is exhibited in the bead work, which is so conspicuous in the female costume. The colors are blended harmoniously, and the patterns are ingeniously devised and skilfully executed. It sufficiently appears, from the furnished specimens of their handywork, that the Indian female can be taught to excel with the needle. It remains to notice briefly the several articles of apparel, of which these costumes are composed; and first, of the female.

Ah-tä-quä-o-weh, or MOCCASIN.

This has been sufficiently described elsewhere in this report.

Gise-hă, or PANTALETTE. Plate 4.

The Gise-hă is usually made of red broadcloth, and ornamented with a border of bead work around the lower edge, and also up the side. It is secured above the knee, and falls down upon the moccasin. The one furnished is beautifully made, and a fine specimen of bead work.

Gä-kä-ah, or Skirt. Plate 5.

The skirt is secured around the waist, and descends about half way to the bottom of the pantalette. It is usually of blue broadcloth, and is more elaborately embroidered with bead work than any other portion of the dress. A heavy border is worked around the lower edge. Up the centre, in front, it is also embroidered. At the angle upon the right side, a figure is worked representing a tree or flower. This part of the costume furnished, is a rare specimen of Indian needle work.

Ah-de-a-dä-we-să, or Over Dress. Plate 6, and 6 *a*.

The over dress is generally of calico, of the highest colors. It is loosely adjusted to the person, and falls below the waist. Around the lower edge is a narrow border of bead work. In front they wear a profusion of silver broaches, of various sizes and patterns, and arranged agreeably to the taste of the wearer.

E-yose, or Blanket.

This indispensable and graceful garment is of blue or green broadcloth, of which it requires two yards. It falls from the head or neck in natural folds, the width of the cloth, and is gathered around the person like a shawl. It is worn very gracefully, and makes a becoming article of apparel. Other ornaments are worn, but the costume has been described with sufficient minuteness to give a general idea of its character.

Gus-to-weh, or Head Dress. Plate 3, fig. 1.

Upon the head dress, the most conspicuous part of the male costume, much attention was bestowed. The frame consists of a band of splint, adjusted around the head, with a cross band arching over the top, from side to side. A cap of net work, or silk, is then made to enclose the frame. Around the splint a silver band is fastened, which completes the lower part. From the top, a cluster of white feathers depends. Besides this a single feather, of the largest size, is set in the crown of the head dress, inclining backwards from the head. It is secured in a small tube, which is fastened to the cross splint, and in such a manner as to allow the feather to revolve in the tube. This feather, which is usually the plume of the Eagle, is the characteristic of the Iroquois head dress. The feather, in the specimen furnished, has been worn for many years by Sose-ha-wä, (above referred to) and has been conspicuous at many of the councils of the Senecas.

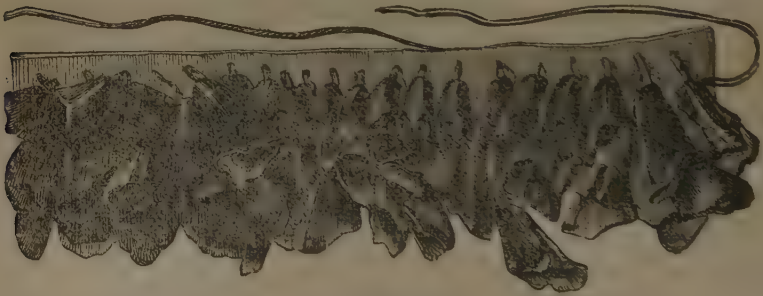
Gä-kä-ah, or KILT. Plate 7.

The kilt is secured around the waist by a belt, and descends nearly to the knee. It is fringed around the lower edge, and covered with various ornaments. This article of Indian apparel is not much unlike the kilt of the Highlander.

Gise-hă, or LEGGIN. Plate 8.

The leggin is usually made of red broadcloth. It is embroidered around the lower edge and up the side, with bead work. Two narrow bands depend from the knee in front. It is secured above the knee, and descends to the moccasin.

Gus-da-wä-să Yen-che-no-hos-ta, or KNEE RATTLE OF DEER'S HOOFS.

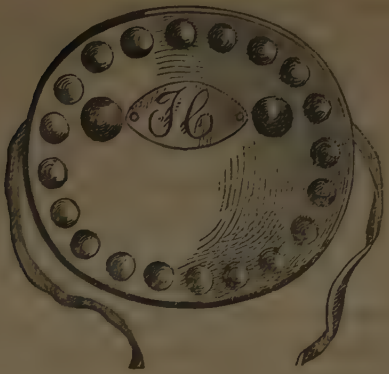


In the dance, rattles were worn around the knee. They are usually made of the hoofs of the deer, which are strung in two or three rows upon a belt, and the belt itself then tied around the knee.

Gä-geh-tä, or BELT. Plate 9.

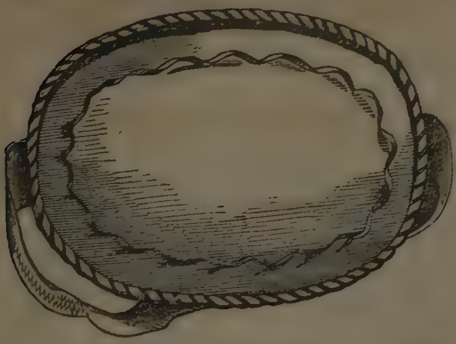
The belt is of Indian manufacture. It is braided by hand, the beads being interwoven in the process of braiding. They are worn around the waist, and over the left shoulder. No part of the costume is prized so highly as the belt.

Gä-nuh-sä, or SEA-SHELL MEDAL.



The government have long been in the habit of presenting silver medals to the chiefs of the various Indian tribes, at the formation of treaties, and on the occasion of their visit to the seat of government. These medals are held in the highest estimation. Red Jacket received one from Washington, in 1792, which is now worn by the Seneca chief Sose-ha-wä. It is an elliptical plate of silver, surrounded by a rim, and is about six inches in its greatest diameter. On each side it is engraved with various devices. Medals of sea shell, inlaid with silver, are also worn suspended from the neck, as personal ornaments. A specimen of the latter description is furnished.

Tuesh-tä-ga-tas-tä, or TIN BREAST-PLATE.



The above is a representation of a species of tin breast-plate, worn by the Seneca Indians.

Arm Bands, Knee Bands, and Wrist Bands. Plate 10.

These, also, form a part of the costume. They are usually of bead work, but often of silver. The war club, tomahawk, and moccasin, complete the costume.

Gä-yä-ah, or Work Pocket. Plate 11.

Ya-wa-o-dä-quä, or Needle Book. Plate 12.

Ya-wa-o-dä-qua, or Pin Cushion. Plate 13.

Got-gwen-dä, or Pocket Book. Plate 14.

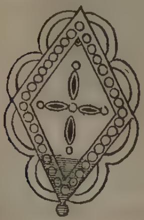
These are furnished as further specimens of the handiwork of the Indian female in bead work. The figures themselves will dispense with the necessity of any description. The patient industry of the Indian female is quite remarkable, when seen in contrast with the impatience of labor in the Indian himself. In the work of their reclamation and gradual induction into industrial pursuits, this fact furnishes no small degree of encouragement.

Gä-kä, or Breech Cloth. Plate 15.

In the ball game the players denude themselves entirely, with the exception of a belt, which is secured below the waist, and the Gä-kä, which passes under it before and behind. It is usually of broadcloth, and ornamented with bead work.

Several articles of silver ware will also be found in the collection. They consist of hat bands, arm and wrist bands, ear rings and broaches, of various patterns and sizes. They are principally of Indian manufacture. The following cuts represent a pair of ear rings worn by Ho-ho-e-yu, in 1849.

Ah-was-hă, or Ear Ring.



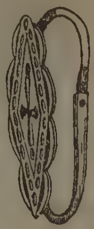


Plate No. 17 is an engraving of Pipes, in use among the Indians.

Ga-on-seh, or BABY FRAME. Plate 16.

This is likewise an Indian invention. It appears to have been designed rather as a convenience to the Indian mother, for the transportation of her infant, than, as has generally been supposed, to secure an erect figure. The frame is about two feet in length, by about fourteen inches in width, with a carved foot-board at the small end, and a hoop or bow at the head, arching over at right angles. After being enclosed in a blanket, the infant is lashed upon the frame with belts of bead work, which firmly secure and cover its person, with the exception of the face. A separate article for covering the face, is then drawn over the bow, and the child is wholly protected. When carried, the burden strap attached to the frame is placed around the forehead of the mother, and the Ga-on-seh upon her back. This frame is often elaborately carved, and its ornaments are of the choicest description. When cultivating the maize, or engaged in any out-door occupation, the Ga-on-seh is hung upon a limb of the nearest tree, and left to swing in the breeze. The patience and quiet of the Indian child, in this close confinement, are quite remarkable. It will hang thus suspended for hours, without uttering a complaint.

With the Ga-on-seh, closes the enumeration of articles. Several have been necessarily omitted, and others noticed but slightly. Sufficient, however, has been written, to illustrate the general character of our Indian fabrics, implements and utensils. Some of them have been noticed minutely, as they appeared calculated to exhibit the artisan intellect of our primitive inhabitants. It is in this view that they are chiefly interesting. Some general observations naturally present themselves upon this branch of the subject, but the prescribed limits of this report will not permit their introduction.

Such is the diffusion of Indian arts and Indian inventions among the Red races, that it is impossible to ascertain with what nation or tribe they in fact originated. Many of them were common to all, from Maine to Oregon, and from the St. Lawrence to the peninsula of Florida. To this day Indian life is about the same over the whole republic. If we wished to discover the inventions of the Iroquois, we might expect to find them as well among the Sioux of the upper Mississippi, as among the descendants of the Iroquois themselves. It is for this reason, that in forming an Indian collection, we should take in the whole range of Indian life, from the wild tribes dwelling in the seclusions of Oregon, to the semi-agricultural Cherokees of the south, and the present Iroquois who reside among ourselves. They have passed through all the intermediate stages, from extreme rudeness to comparative civilization. If we wished to connect the fabrics of the former with those of our own primitive inhabitants, we may find that connection in the fact, that similar implements and similar fabrics, at no remote period, were in the hands, and of the manufacture, of the Iroquois themselves. Many of the relics disentombed from the soil of New-York, relate back to the period of the Mound builders of the west; and belong to a race of men and an age which have passed beyond the ken of even Indian tradition. Our first Indian epoch is thus connected with that of the Mound builders. In the same manner, the fabrics of the Iroquois are intimately connected with those of all the tribes now resident within the republic. One system of trails belted the whole face of the territory, from the Atlantic to the Pacific; and the intercourse between the multitude of nations who dwelt within these boundless domains was constant, and much more extensive than has ever been supposed. If any one, therefore, desired a picture of Iroquois life before Hendrick Hudson sailed up the river upon whose banks rested the eastern end of their "Long House,"* he should look for it in Catlin's Scenes at the skirts of the Rocky Mountains. There are diversities, it is true, but Indian life is essentially the same.

A collection, therefore, which embraced within its range the utensils, implements, and miscellaneous fabrics of the whole Indian family, would best illustrate the era of Indian occupation within our own State. Such a collection can, and ought to be made. It would be doing, in our republic, what European nations have taken unwearied pains to accomplish within their own territories. They have treasured up, with watchful care, the memorials of their own territorial history. These memorials unlock the social history of the past; and although silent, they speak more eloquently than all human description. Our own are essentially Indian. An Indian collection is all that we can offer to the European, in acknowledgment of the gratification and instruction we have derived from theirs. While every petty State abroad has its Historical Cabinet, the visitation of which furnishes the chief pleasure of the traveler, our own States, one of which numbers three millions of people, have nothing of the kind for the entertainment of the foreign traveler. The custom among all civilized nations, of making such collections, rests upon sound considerations of public utility; and the reasons which induce them are just as applicable here, as elewhere; and just as appropriate to each single State, as to the National Government.

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* Ho-de-no-sau-ne, the name of the Iroquois as one people, signifies "The People of the Long House." They symbolized the League by a house, which reached from the Hudson to the Genesee; and afterwards to Niagara, on the expulsion of the Eries and Neuter Nation, about the year 1650.

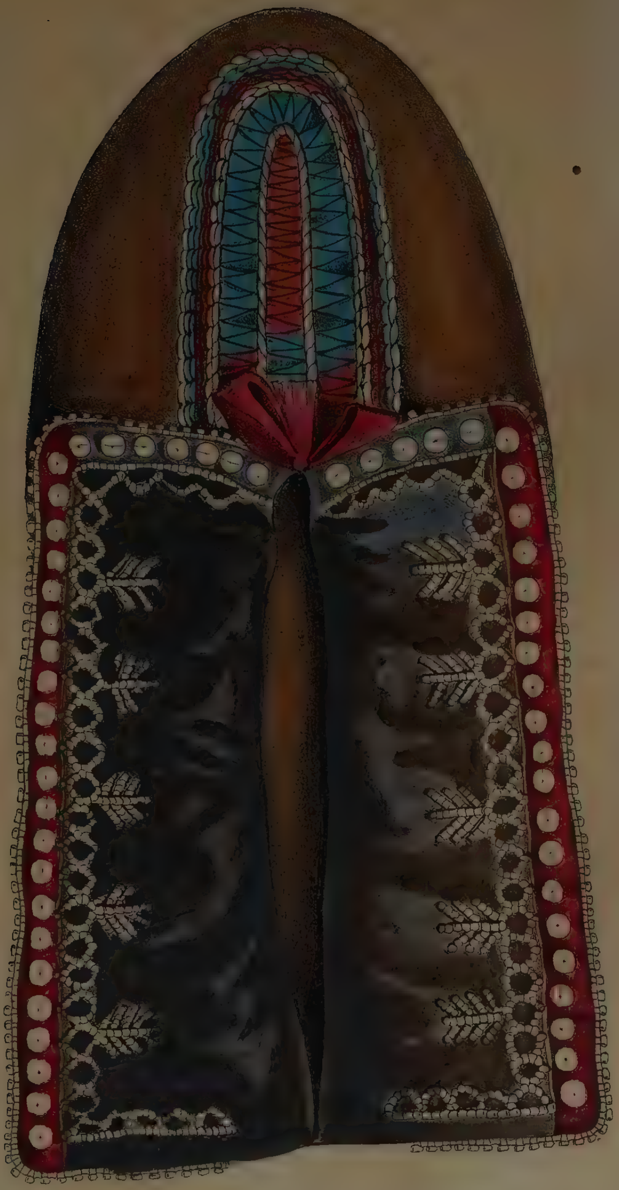
This enterprise has been fairly entered upon, under the fostering care of the Regents of the University. The foundation, at least, of an Indian Collection, has been established. Were it enlarged, upon the principles suggested in this report, it would soon become one of the most interesting of all Historical Cabinets. It would grow in public value, as the people whose social condition it reveals, recede from public observation; and in after years it would become inestimable. But such are the changes, and causes of change at work among our Indian races, that the present moment should be improved with diligence. Time buries every thing in a common tomb.

The Red races are passing away before the silent, but irresistible spread of civilization. The tenure of Indian sovereignty is as precarious as the habitation of the deer, his co-tenant of the forest. Their gradual displacement is as inevitable as the progress of events. A portion, indeed, of the Indian family, if present indications are to be trusted, is destined eventually to be reclaimed, and raised to a citizenship among ourselves. But this can only be accomplished by their adoption of agricultural pursuits, and the diffusion of knowledge among them. When this change is effected, they will cease to be Indians. A different destiny awaits the residue. At no distant day the war shout of the Red man will fall away into eternal silence, upon the shores of the distant Pacific. Industry will then have taken up her abode in the seclusions of the forest, the church will rise upon the ruins of the council-house, the railway pursue the distant trail, the ploughshare turn the sod of the hunting ground; and the pursuits of peace having diffused themselves over the whole republic, one universal and continuous hum of industry will rise from ocean to ocean. When the destiny of the Indian is thus fulfilled, the words of the great Seneca orator will rise up in perpetual remembrance:

"Who then lives to mourn us? None. What marks our extermination? Nothing."

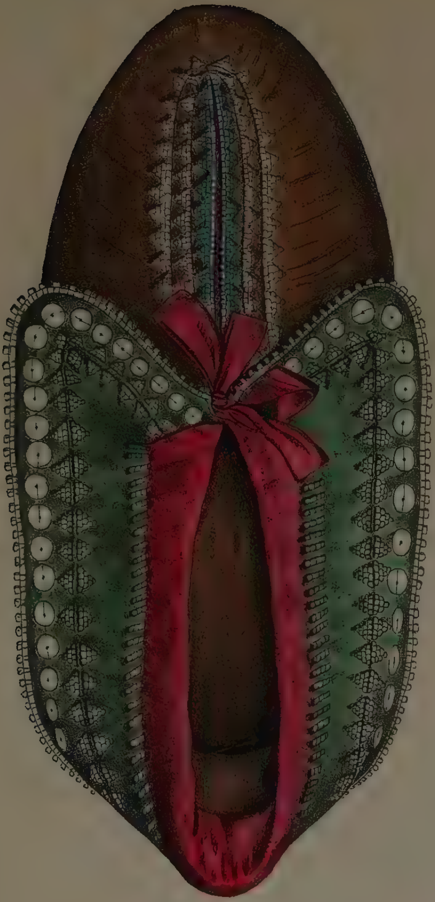
All which is respectfully submitted.

LEWIS H. MORGAN.

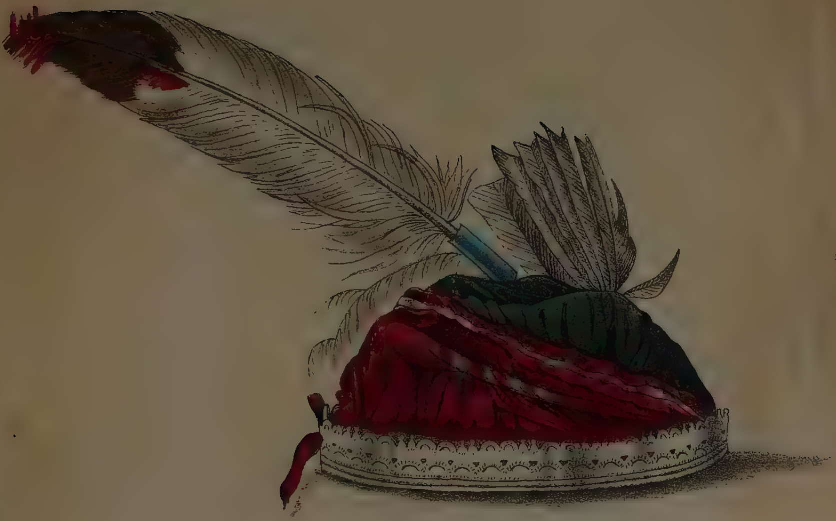


AH-TA-QUA-O-WEH, OR MOCCASON.

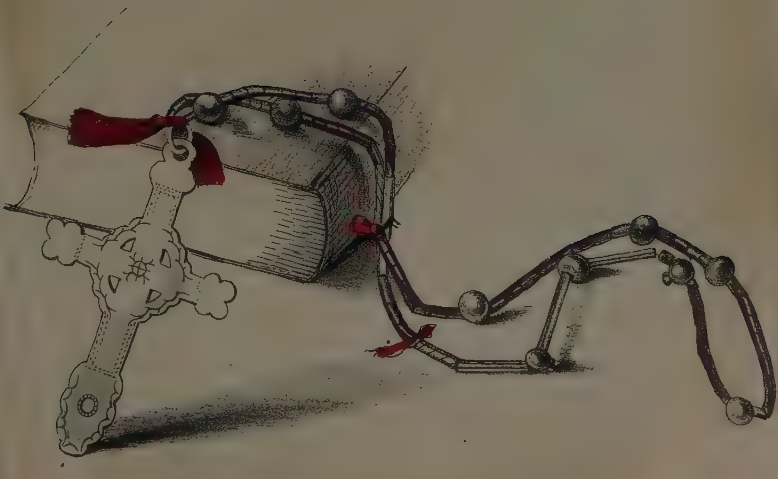
FOR MALE.



AH-TÄ-QUÄ-O-WEH, OR MOCCASON.
FOR FEMALE.

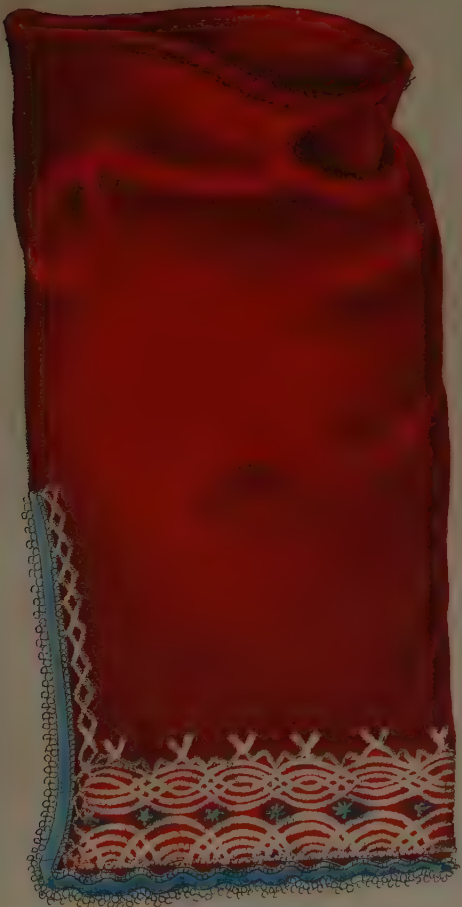


GUS-TO-WEH OR HEAD DRESS.

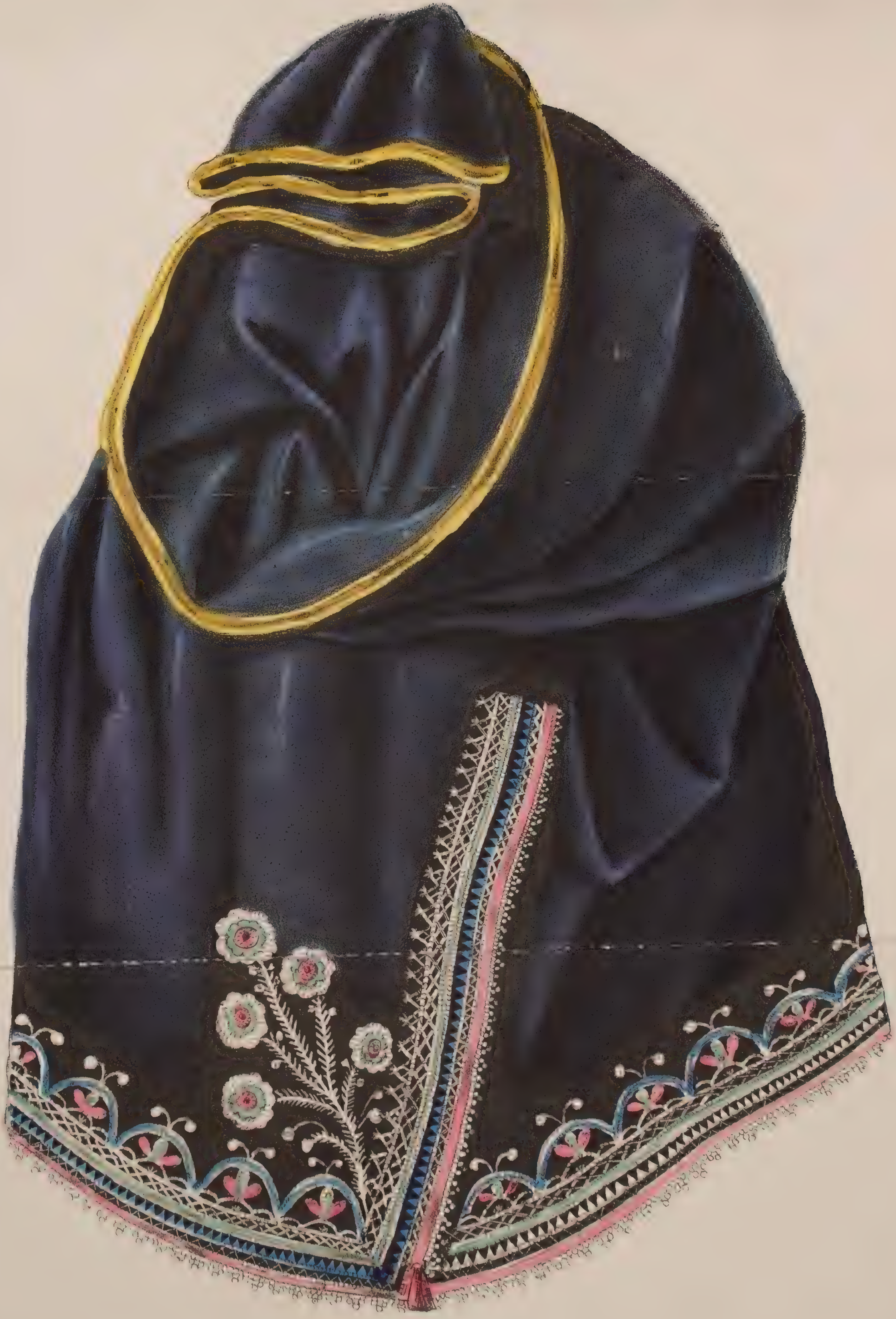


GÄ-DE-US-HA OR NECKLACE.

Gise-hă, or Female Leggin. Pl. 4.

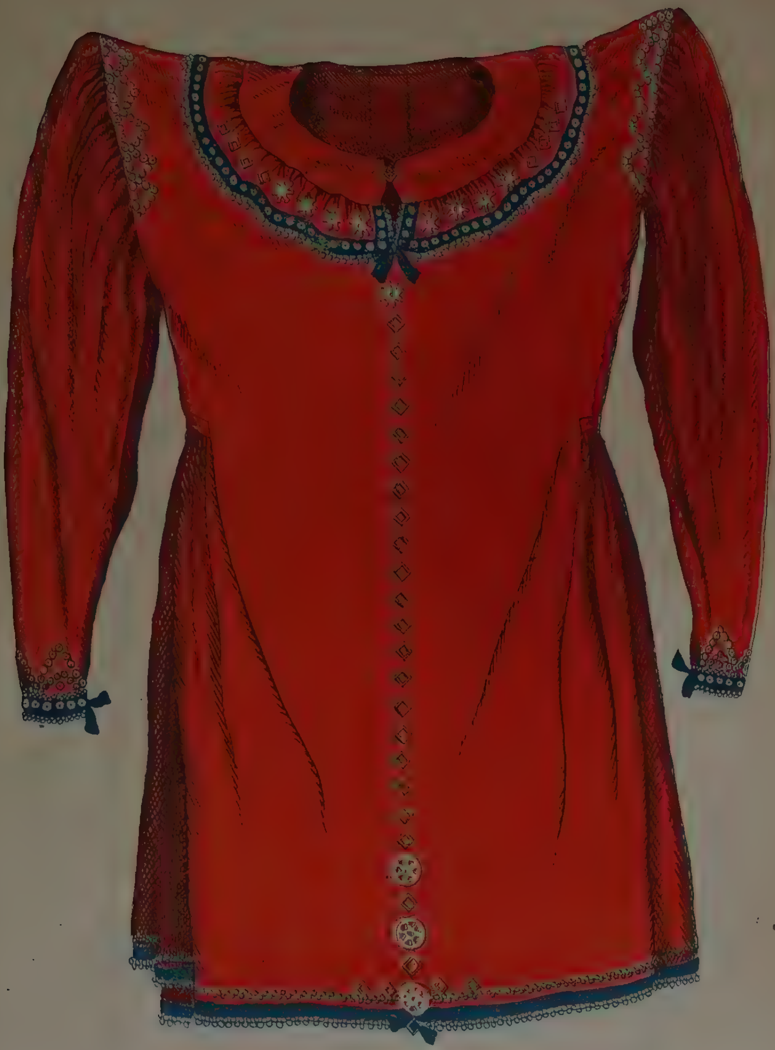


Pl. 5.

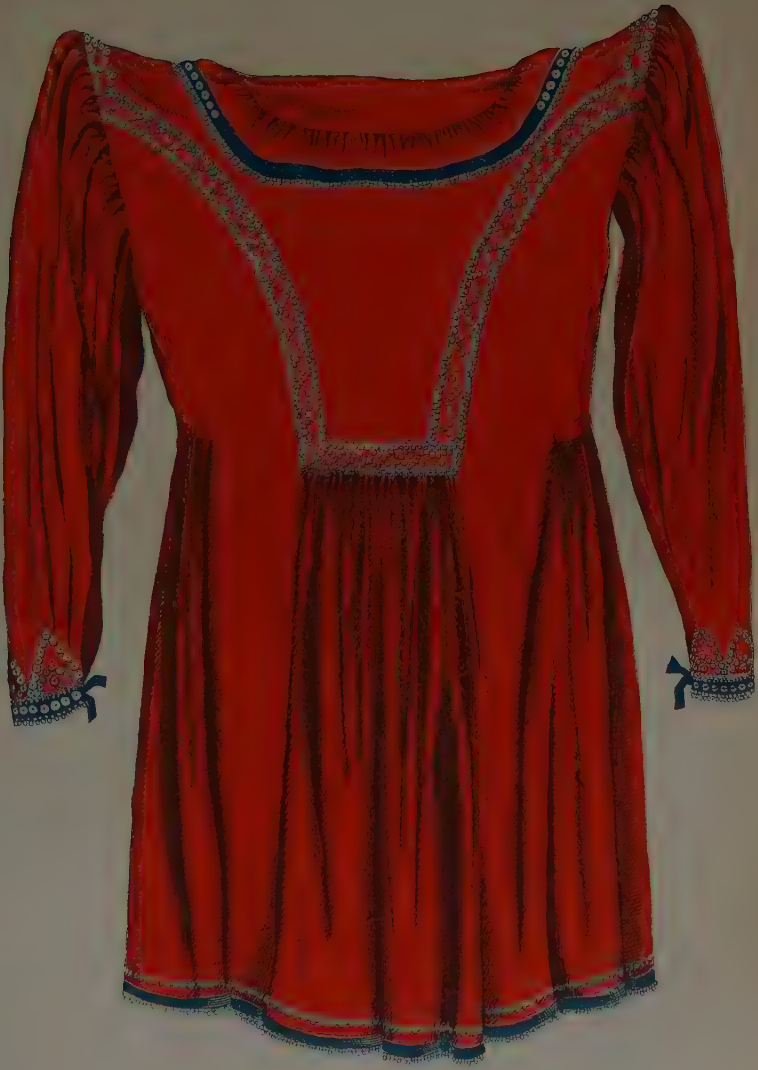


GÄ-KÄ-AH OR SKIRT.

Pl. 6.

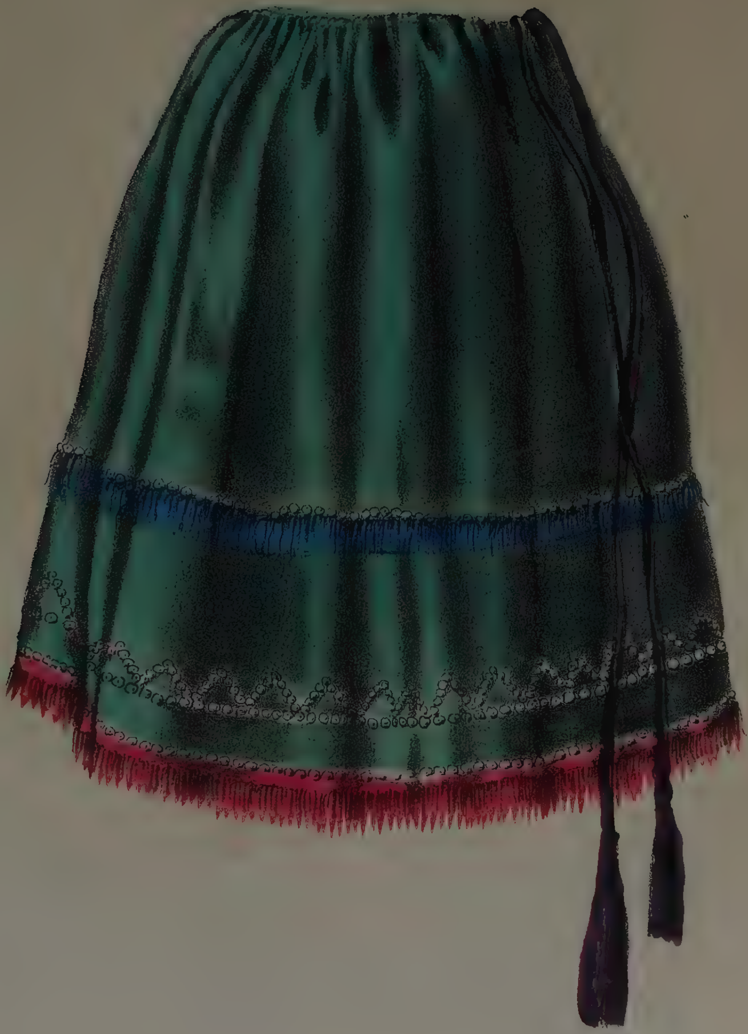


AH-DE-A-DÄ-WE-SÄ OR OVER-DRESS
FRONT



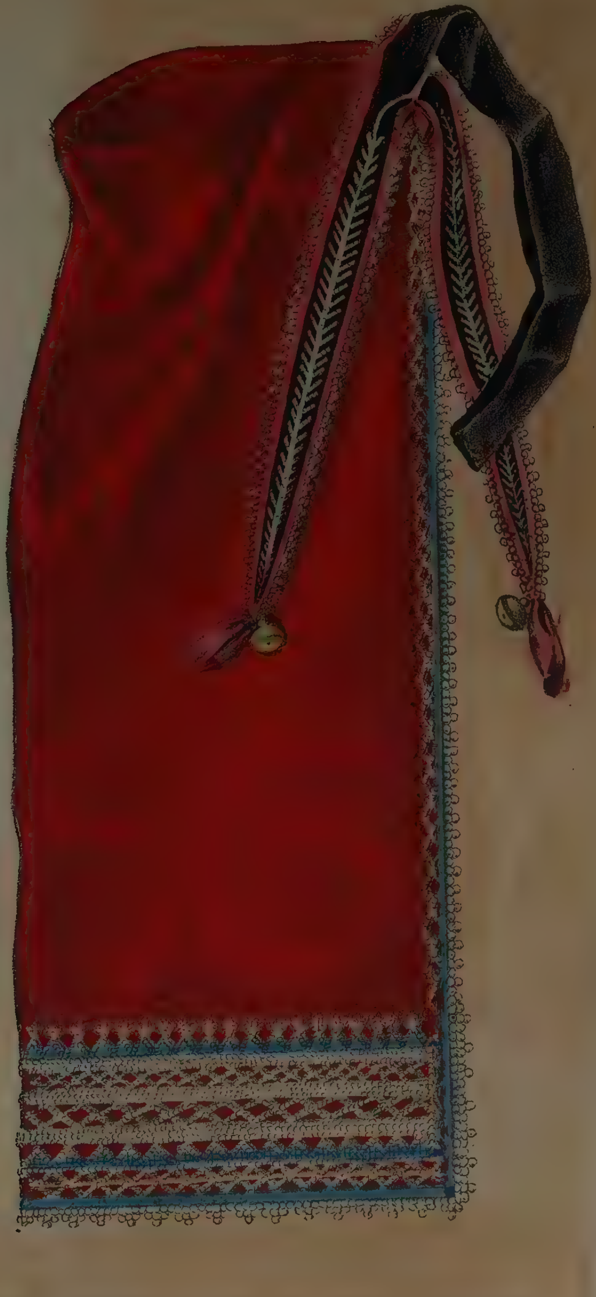
AH-DE-A-DÄ-WE-SÄ OR OVER DRESS.

BACK

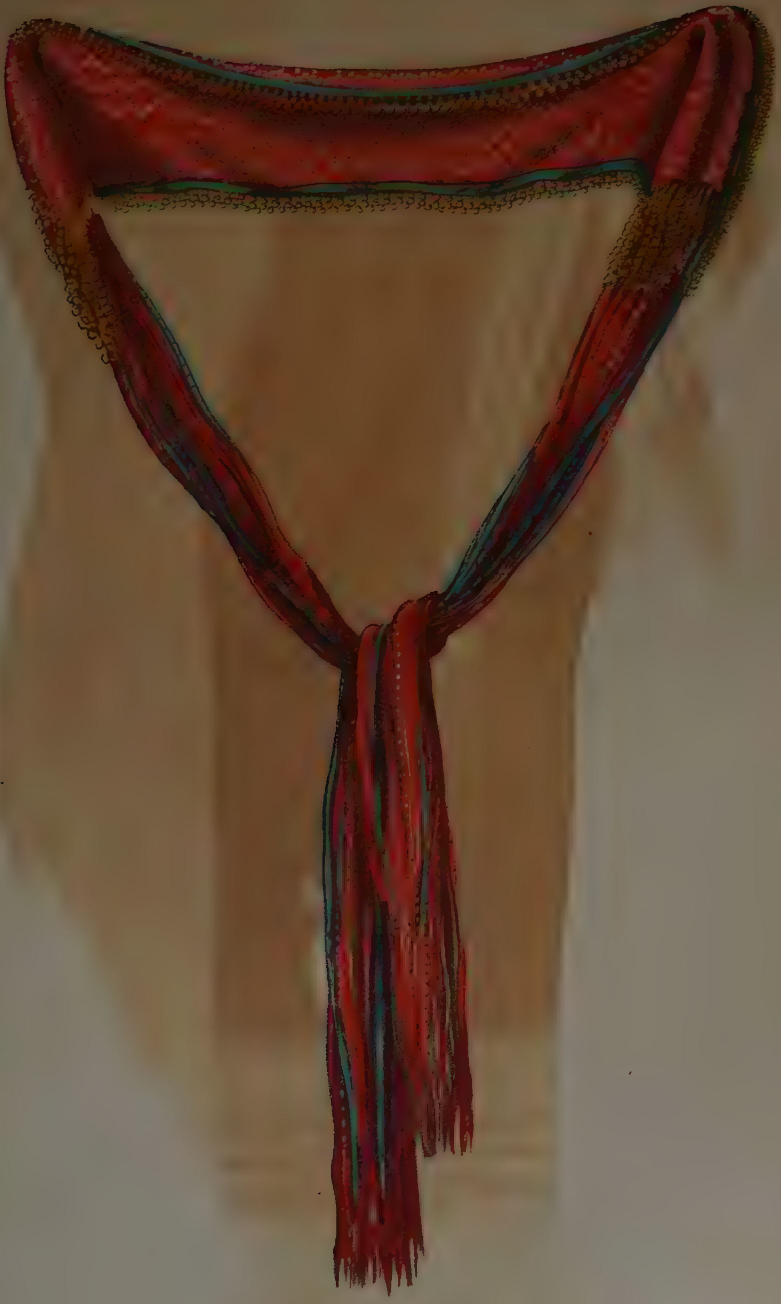


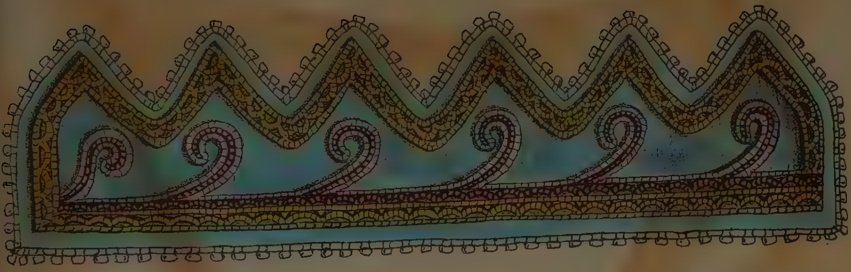
CÄ-KÄ-AH OR KILT.

Gise-hă, or Male Leggin.

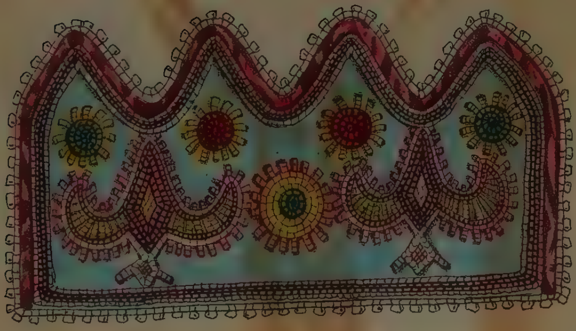


Gä-geh-tä, or Belt.

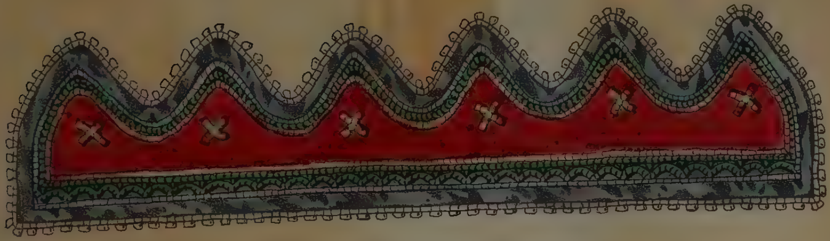




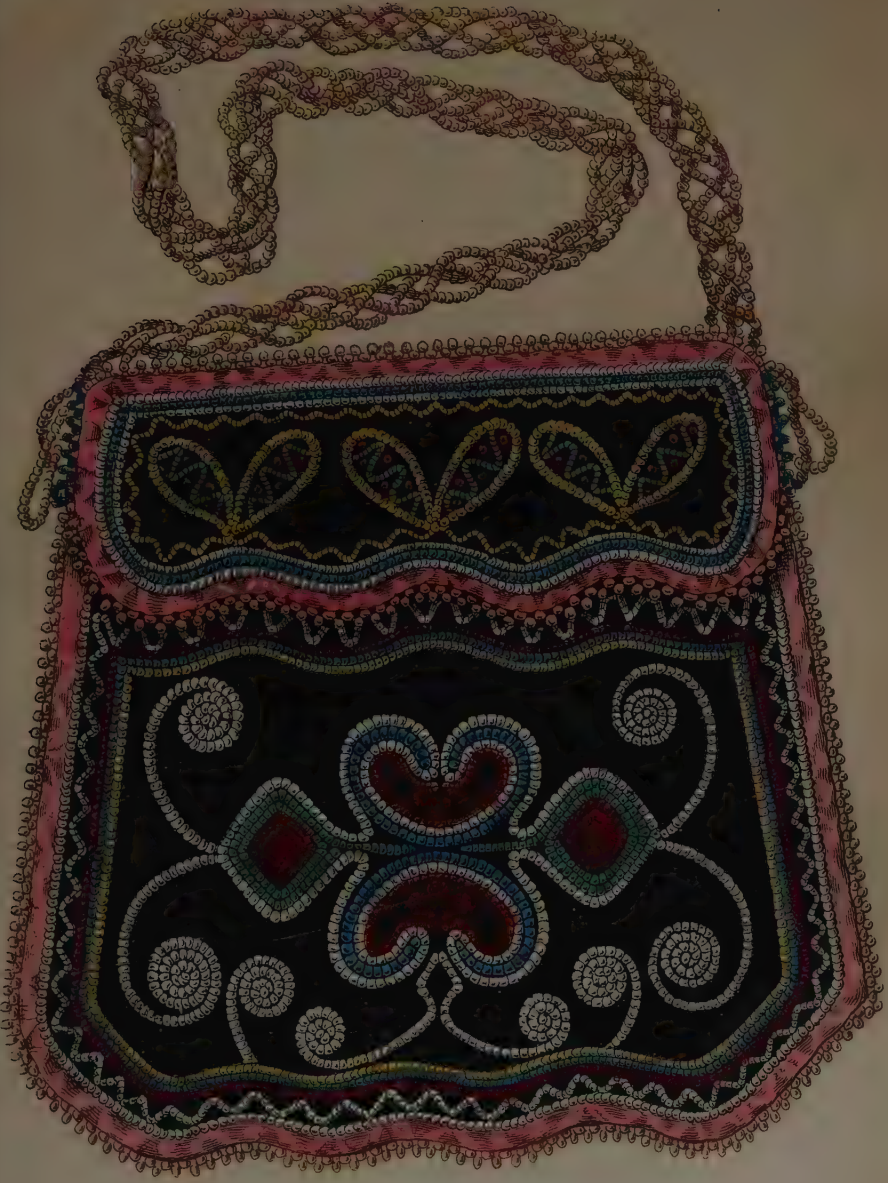
GÄ-GEH-TÄ, YEN-CHE-NO-HOS-TA-TÄ,
OR KNEE BAND



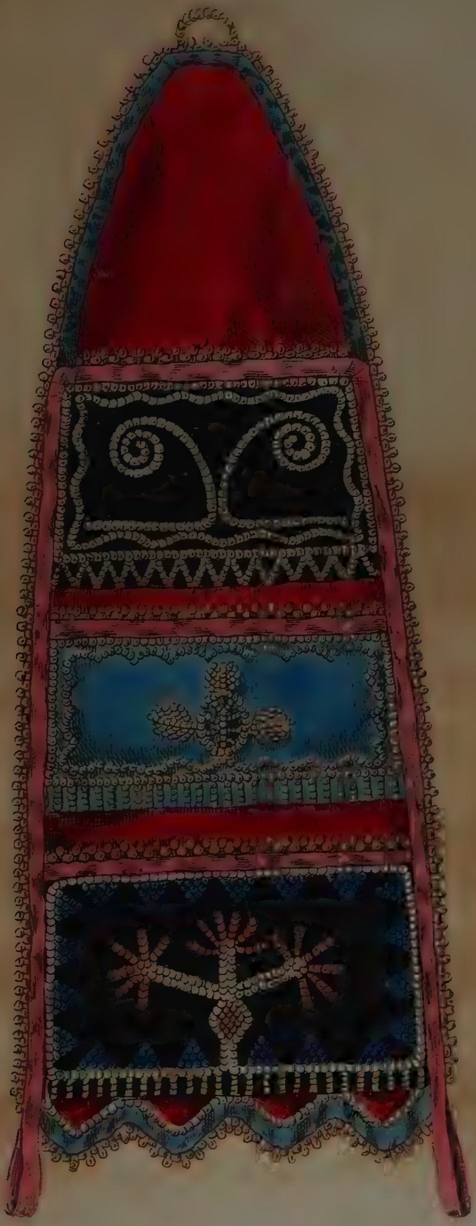
YEN-NIS-HO-QUÄ-HOS-TÄ,
OR WRIST BAND



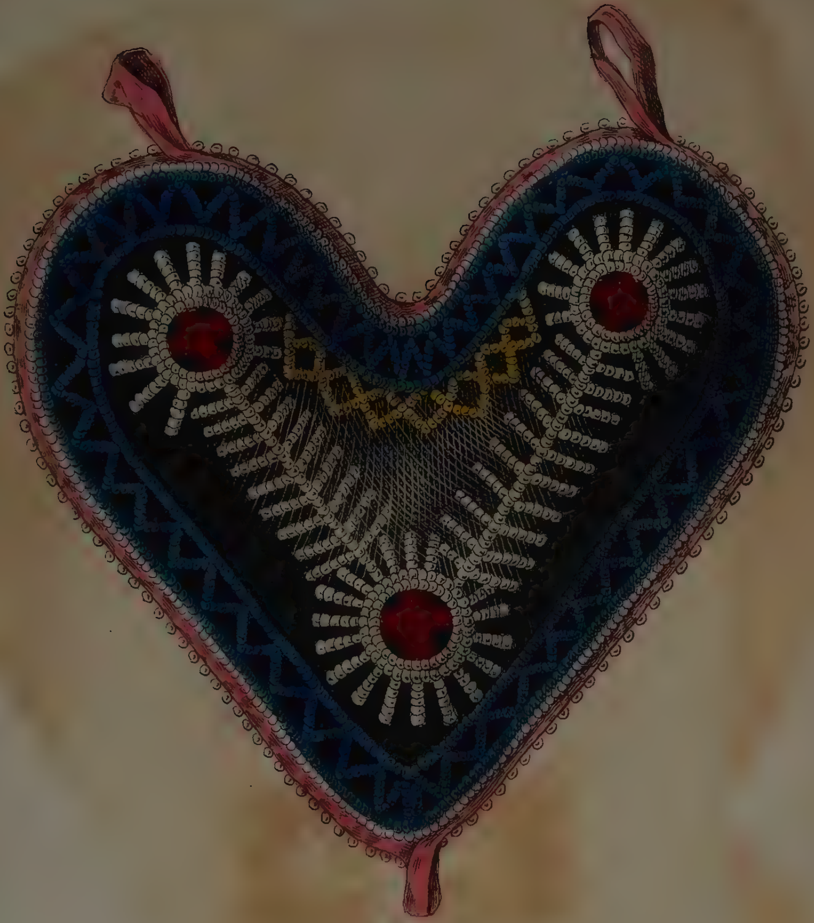
GA-GEH-TA, YEU-NIS-HÄ-HOS-TA,
OR ARMBAND



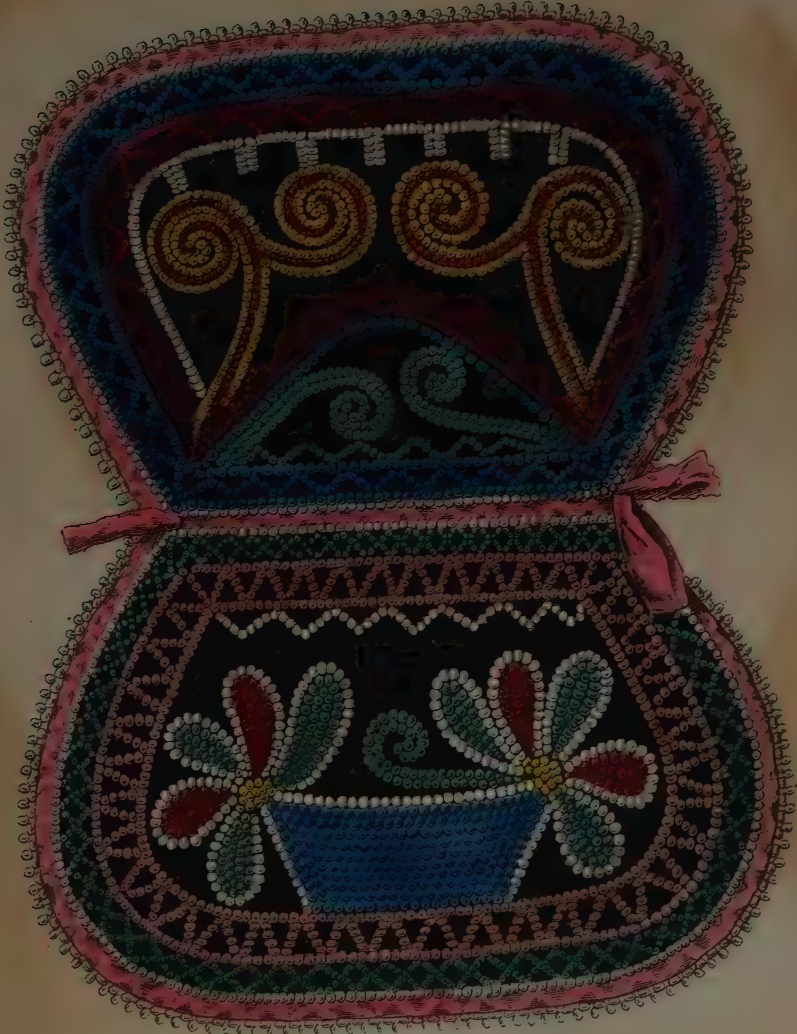
GÄ-YÄ-AH OR WORK BAG.



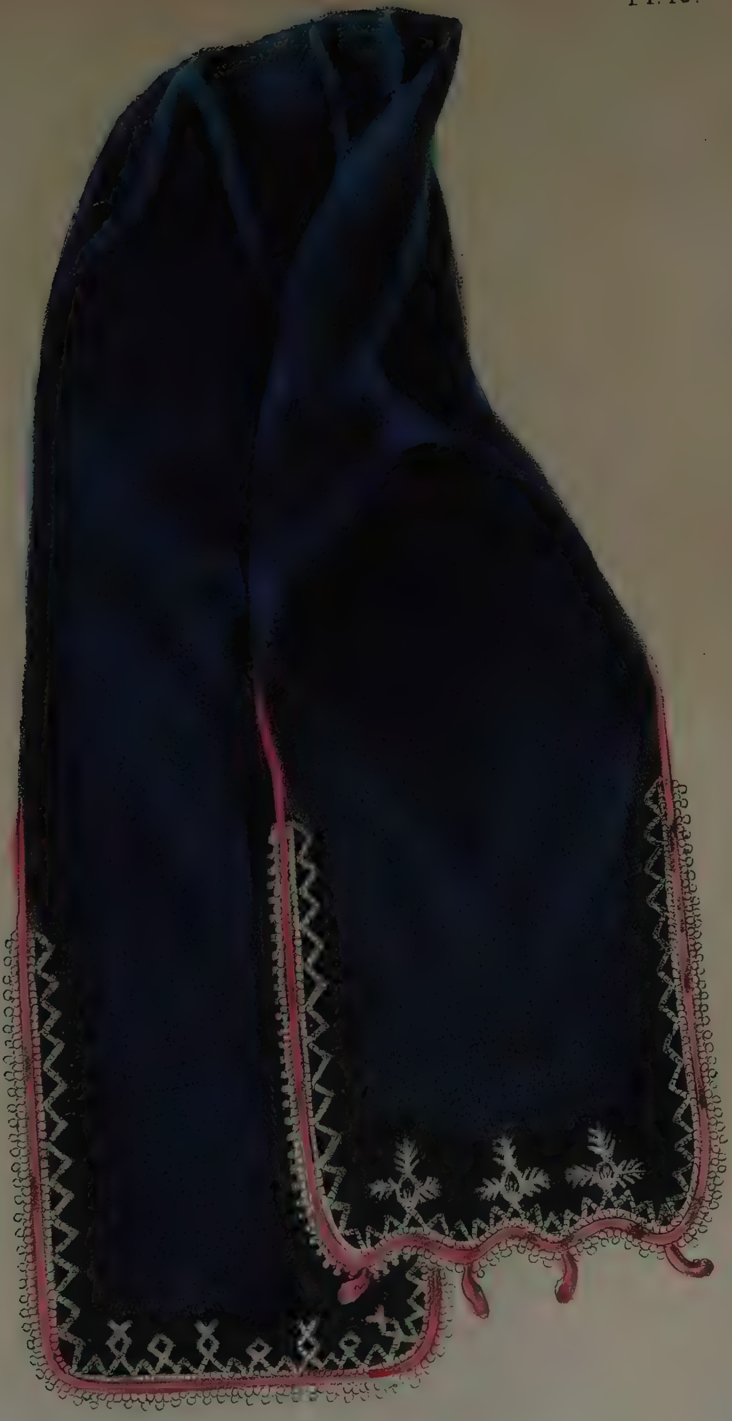
YA-WA-O-DÄ-QUÄ or NEEDLE BOOK.



YA-WA-O-DÄ-QUÄ OR PIN CUSHION.

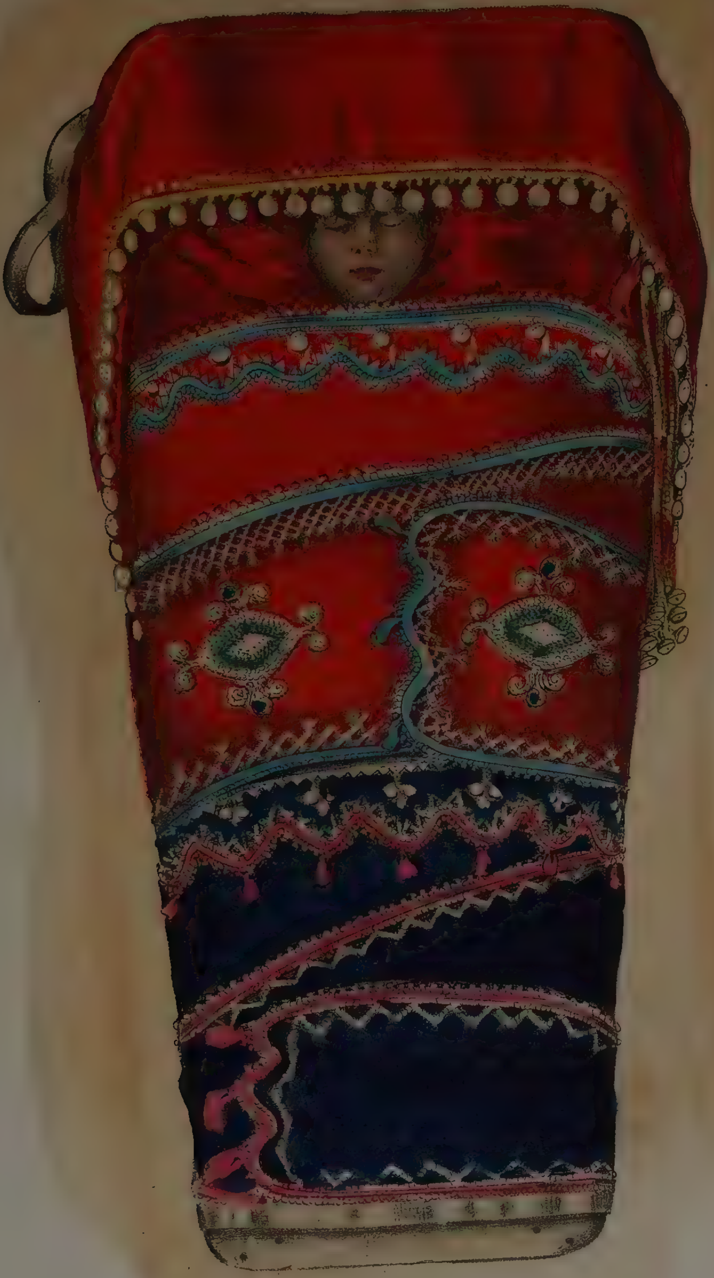


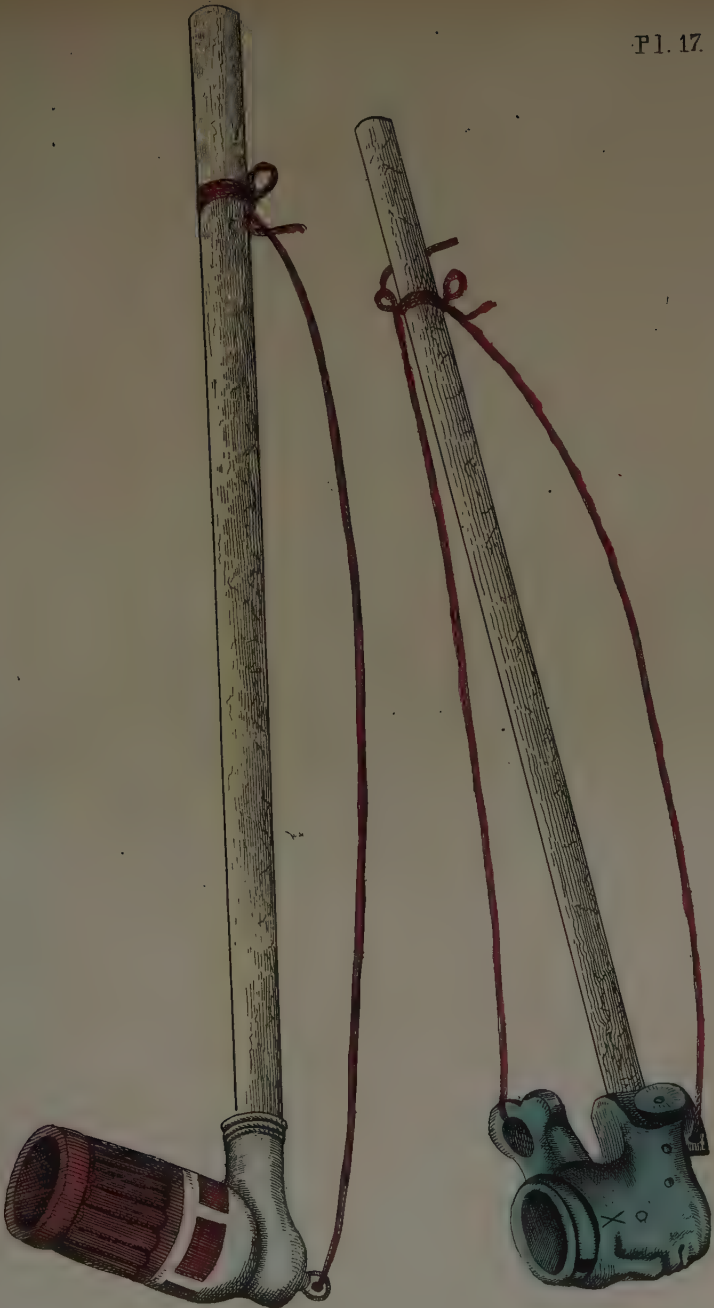
GOT-GWEN-DÄ OR POCKET BOOK.



GÄ-KÄ OR BREECH CLOTH.

Ga-on-seh, or Baby Frame. Pl. 16.





AH-SO-QUÄ-TÄ.
PIPES

(G.)

DR. HOUGH'S PAPER

ON

INDIAN ANTIQUITIES.

NOTICE OF SEVERAL ANCIENT REMAINS OF ART,

IN JEFFERSON AND ST. LAWRENCE COUNTIES,

BY FRANKLIN B. HOUGH, M. D.

In the town of Leray, Jefferson county, there have been found two ancient trench enclosures. One of these is situated near the bank of Black River, a short distance below the little village of "Lockport," (Black River) and is now nearly obliterated by the plough; except the section that crosses the road, and that which lays in a pasture between the road and the river. For the relative situation of this enclosure with surrounding objects, reference is made to the accompanying plan, No. 1.

In the cultivated field north of the road, are found in many places traces of fireplaces, both within and without the trench; and in a circular area to the northeast, several skeletons have been exhumed. From the state of preservation in which these bones are found, it is inferred that they belonged to the recent tribes of Indians that inhabited the region. No aboriginal settlements were known to exist here at the time of the first settlement by the whites, about fifty years since. The same remark applies to all the other remains of ancient enclosures in Jefferson and St. Lawrence counties.

The other trench enclosure is about one mile north of this, is larger, and like the first, contains in and around it numerous traces of hearths, fragments of pottery, shells of edible fresh water shell-fish, and the bones of men and animals. Its outline is in many places very obscure, and the plough will in a few years efface the last vestige of mound or trench. The adjoining flat was once flowed by a beaver dam, making a shallow pond of several acres in extent. The remains of this dam are still distinct. It is built in a curve, the convex side being up the stream. For the dimensions and topography of this enclosure, see plan No. 2.

In the town of Rutland are vestiges of several ancient works. One of these is on land owned by the heirs of the late James Wilson, and near the residence of Abner Tomlin. The space is still covered with a forest, and trees of several centuries growth are standing upon and within the enclosure. Decayed and fallen trunks of others, of which but slight traces remain, indicate that the present growth of timber has been preceded by another quite as ancient, and carry back the origin of these works to a period exceedingly remote.

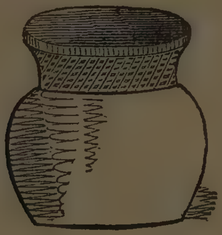
The little hillocks formed by fallen trees, have in some places so confused and obliterated the original work, that it is difficult to determine its precise extent. The annexed plan (No. 3) conveys a good idea of the extent and form of this trench enclosure. Great numbers of human skeletons have been found buried in the trench which surrounds the slight mound yet remaining. Within the area have been found graves, and fireplaces; while in the fields around, which have been cultivated, great numbers of flint arrowheads, stone chisels, pipes, and fragments of coarse earthen ware, have been found. Among the charcoal found within the enclosure, charred corn has been found in considerable qnantities. The skeletons appeared to have been deposited in something like a regular manner, with their heads to the west, and the knees drawn up to the body. This place is about one mile from the western line of the town of Rutland, and two miles from Black River. There is said to have been found in this locality several years since, a *copper* arrowhead. Whether of ancient or recent workmanship, is not known. If the former, it would indicate an acquaintance with distant localities of that metal, as none has been found, in the metalic state, nearer than the great mineral regions of Lake Superior.

In the year 1842, a collection of human bones, evidently of ancient date, was discovered in Rutland, about three miles east from the village of Watertown, on a commanding height, and in a field owned by Mr. E. Huntingdon.

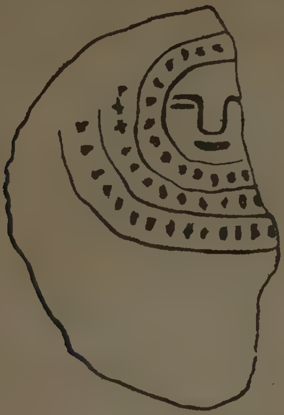
On removing a circular pile of stones, about three feet high and ten feet in diameter, there was discovered a flat stone, which covered a hole four feet square and two feet deep, filled with bones, thrown promiscuously together. They were evidently nothing but bones at the time of their burial, as the space was too small to have contained so many bodies. Some bones exhibited the marks of teeth, as if they had been gnawed by wild animals.

The surrounding fields contain traces of fireplaces, with much charcoal and charred corn ; and the whole appears to bear evidence of ancient massacre and pillage, in which an Indian village was destroyed, and the bones of the slain afterwards collected and buried by their friends. The bones were in a tolerable state of preservation, but soon decayed on exposure. It was estimated that there were between thirty and forty skeletons buried here, besides detached bones of animals.

Among fragments of broken pottery found in this vicinity, was an entire pot, having a capacity of about three pints, and the form represented in the sketch.



A fragment of a pipe, contained the representation of a human face on each side, only a part of which remained, was also found; a figure of which is here inserted.



In the town of Macomb, St. Lawrence county, are found three trench enclosures, and numerous places where broken fragments of rude pottery, ornaments of steatite, and beds of charcoal and ashes, indicate the sites of Indian villages. It may be proper to state, that this region was not inhabited at the time of its first settlement by the whites.

One of these ruins is on the farm of William P. Houghton, near the bank of Birch creek, and is the one which has furnished the greatest quantity of relics. Beads of steatite, pipes, and broken utensils of earthen, the bones of fish and wild animals, shells, &c., occur, mixed with ashes and bits of charcoal, throughout the soil, within and without the limits of the trench, and have been collected and carried off in large quantities. Cultivation has nearly obliterated every trace of the enclosure, but by the aid of several persons who were acquainted with the locality when first discovered, the accompanying plan (No. 4) has been drawn, which is believed to represent the situation and extent of this work, before the land was tilled.

The ground formerly occupied by the trench, is at present the site of an orchard, and used as a mill yard.

Reference to this work is made in several gazetteers and "Historical Collections," as occurring on the farm of Capt. Washburn, in Gouverneur, (the former owner of the land, before the erection of the township of Macomb,) and in these it is erroneously stated that rude remains of sculpture occur within the enclosure. No traces of sculpture (except the beads, pipes, and other articles,) have ever been found here.

About half a mile northeast of this place, is the trace of another enclosure, but so obliterated by cultivation, that it could not be surveyed with any degree of certainty. It occurs on the farms of Josiah Sweet and William Houghton, the greater portion being upon the farm of the latter.

It is situated on a small stream, the outlet of a tamarack swamp, formerly a beaver meadow; is of an irregular oval figure, and can be traced with tolerable accuracy about 160 paces, which is nearly half of the original circumference. Its longest direction was NNE. and SSW. Numerous fire-beds occur within the enclosure, and in one instance, a quantity of ashes and charcoal was found five feet below the surface. In a field a few rods distant, large quantities of broken pottery, and traces of an Indian village, are found. About three-fourths of a mile from the enclosure first described, (plan No. 4) there occurs another trench, of semicircular form, and in a far more perfect state of preservation than either of the others. This is on the farm of Robert Wilson, and about 25 rods south of "Wilson's Lead Mine."

For the topography and extent of this trench, reference is made to the accompanying plan, No. 5.

As the land around this has never been ploughed, it has not furnished any relics of interest.

In the town of Massena, St. Lawrence county, is an ancient trench enclosure, on the farm of Josiah C. Bridges, about half a mile southwest of the bridge over the Racket river, at a place called Racket River P. O. It is on a considerable eminence, about half way between the Racket and Grasse rivers, and three miles from the mouth of the latter. The hill may be fifty feet higher than either river; the ancient work is on the southern declivity of the hill, near the top, and the outer ditch may enclose perhaps an acre. It is nearly square, with the corners projecting beyond the line of the sides; from which it may perhaps be inferred that it was a defensive work, and belonging to a different period from the circular works above described. The bank when first discovered, was surrounded by a ditch about three feet wide, and between one and two feet deep. In the ditch were the remains of old pine trees, some of which must have been at least five hundred years old. Within the enclosure were two elevations, about fifteen feet square, and two feet above the level of the surrounding ground. The location commands a prospect of the country around, in every direction, to a considerable distance.

In Potsdam, St. Lawrence county, there existed, on the first settlement of the country, a work similar to the one last described, but which is now nearly obliterated by the plough. It was on the west side of Racket river, about half way from Potsdam village to Norfolk. Like the other, it was situated near the top of an elevation, conspicuous from all the surrounding country. Like it, also, it was quadrilateral; its size was nearly the same, and the vicinity of both furnishes numerous remains of rude pottery, stone axes, flint arrows, and various ornaments wrought in steatite.

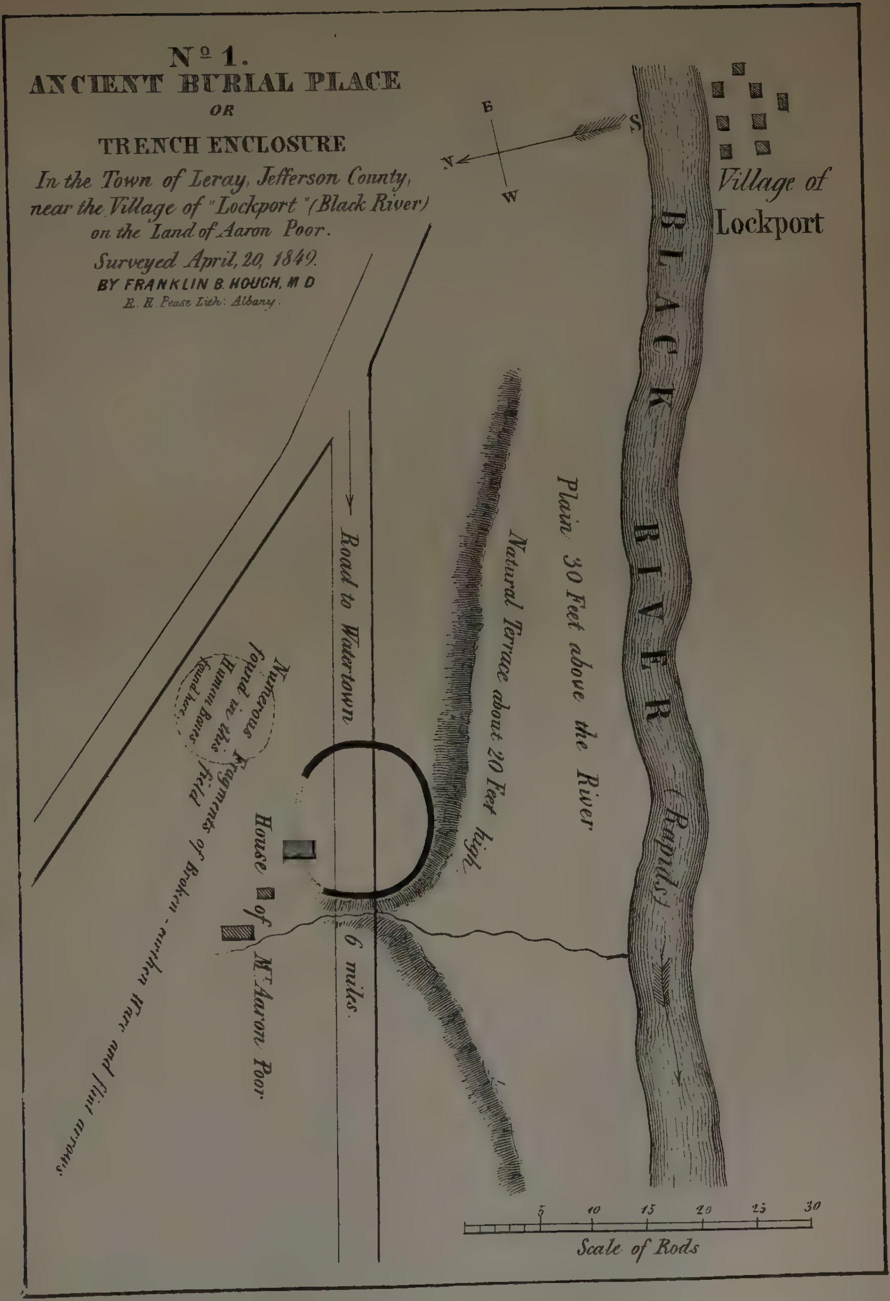
The location in Potsdam is about eighteen miles distant to the southwest, from that in Massena, and there is little doubt but that one might be seen from the other, if the intervening timber was cut away.

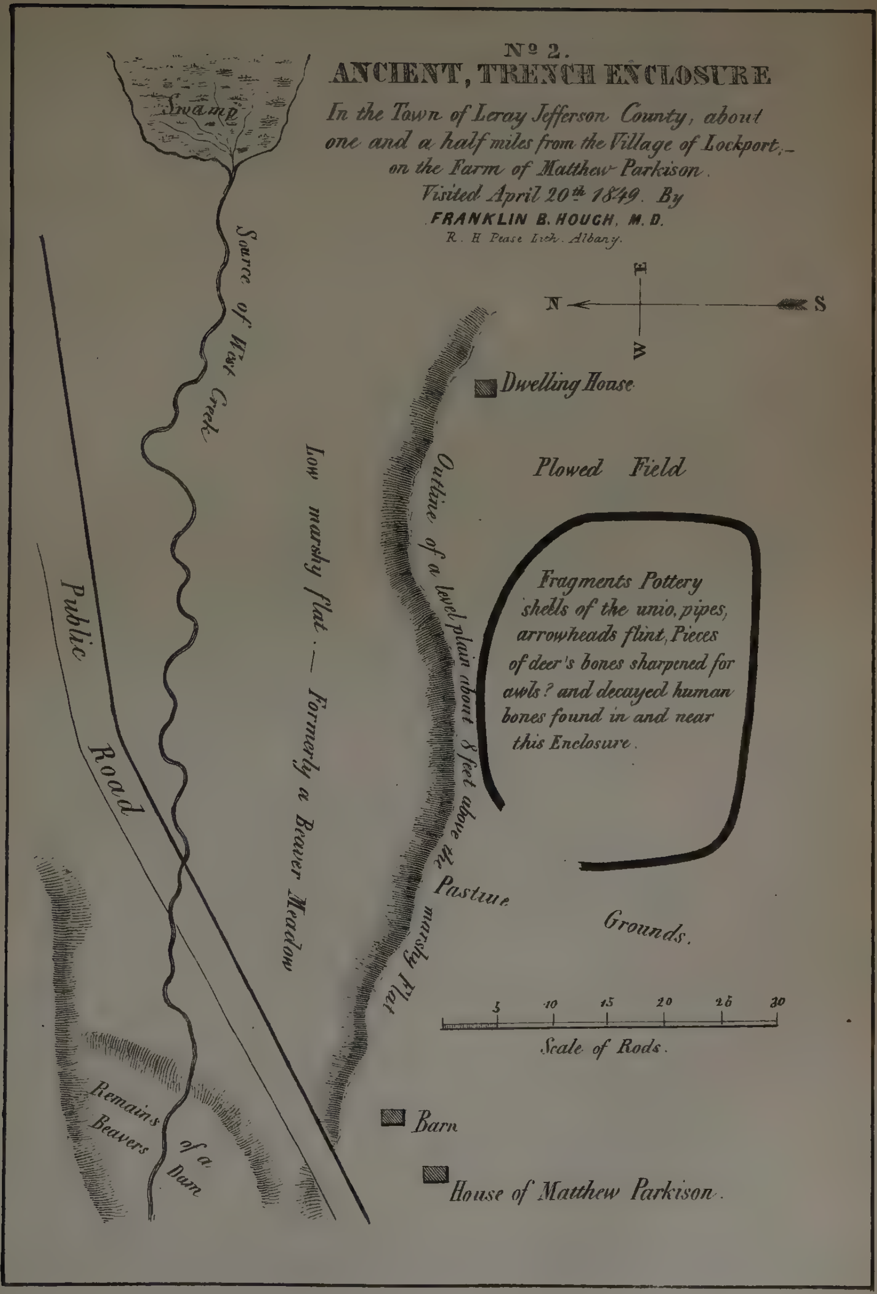
The foregoing are the only remains of ancient art which the writer has been able to learn of in St. Lawrence county, after making the most diligent inquiries. In Jefferson county there are many others, in the towns of Adams, Ellisburgh, &c., of which it is hoped a satisfactory account will hereafter be given.

Nº 1.
ANCIENT BURIAL PLACE
OR
TRENCH ENCLOSURE

In the Town of Leray, Jefferson County,
near the Village of "Lockport" (Black River)
on the Land of Aaron Poor.

Surveyed April, 20, 1849.
BY FRANKLIN B. HOUGH, M D
R. H. Pease Lith: Albany.





Nº 3

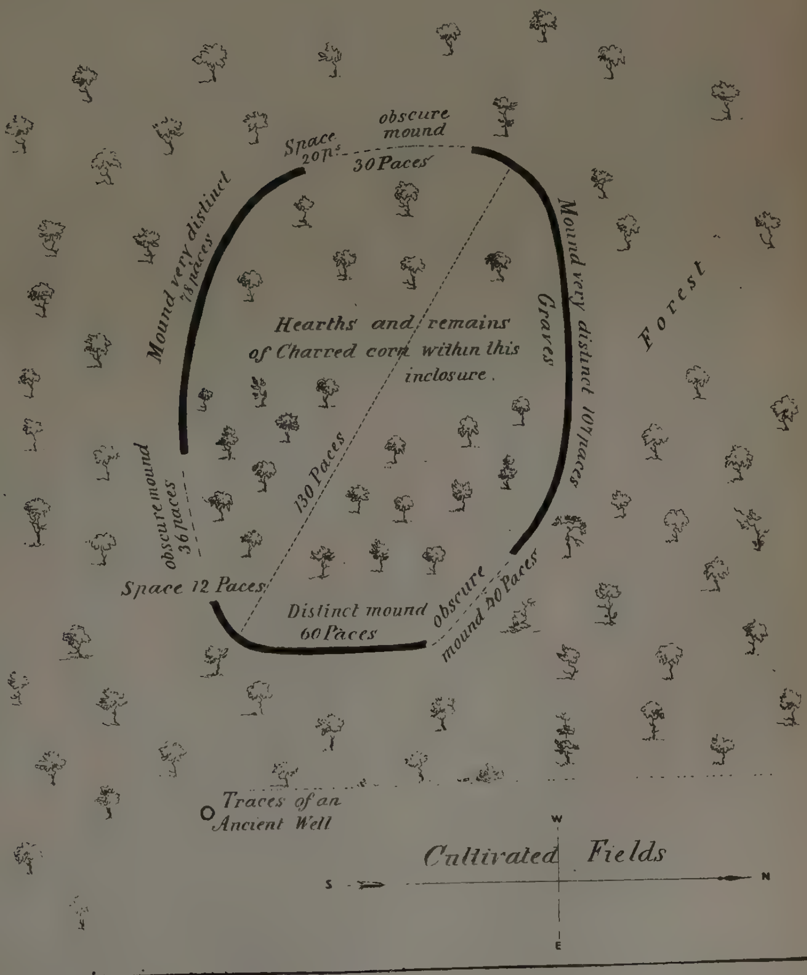
ANCIENT TRENCH ENCLOSURE

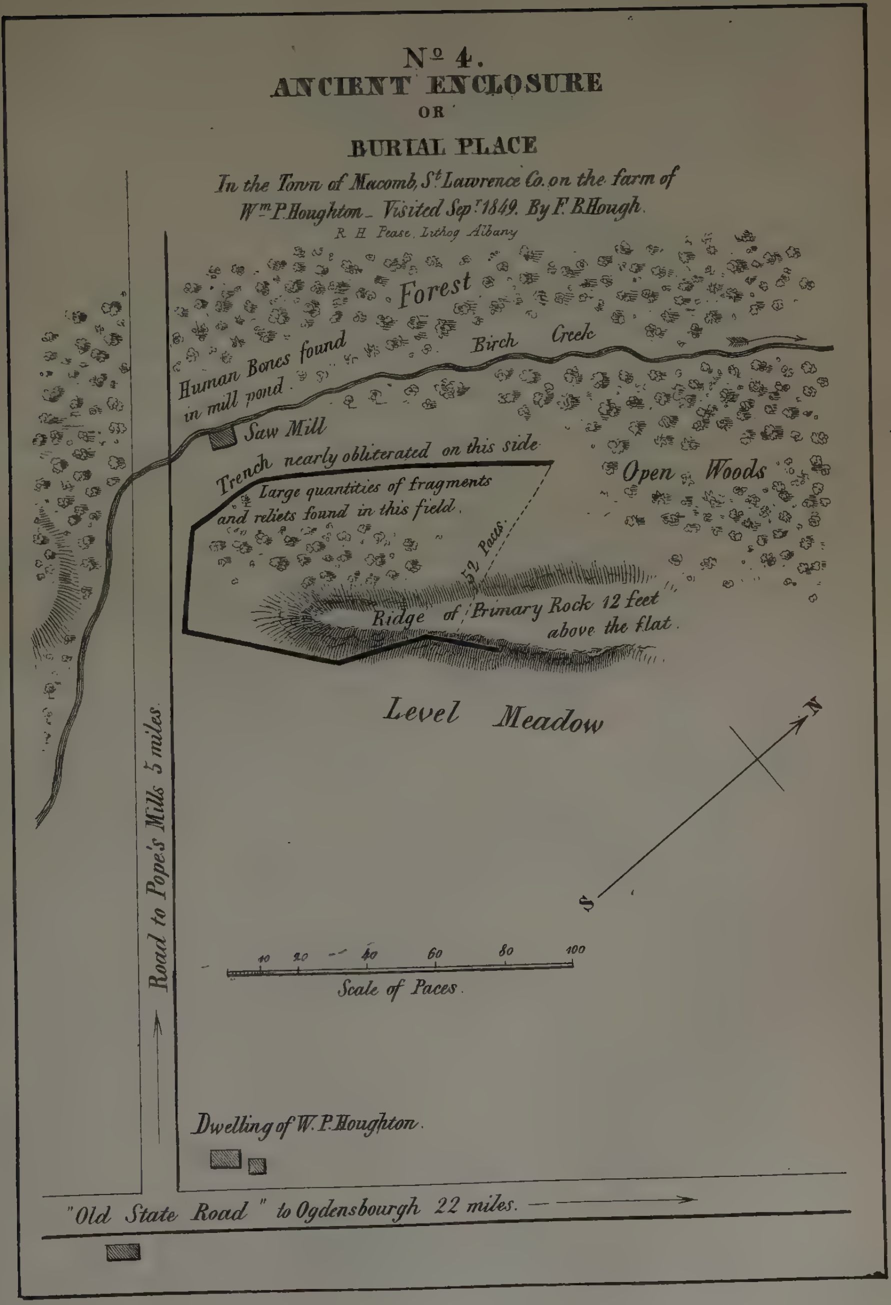
IN THE TOWN OF **RUTLAND** JEFFERSON COUNTY

near the Residence of Abner Tomlin.

Visited and surveyed June 1849 by F.B.Hough.

R.H. Pease Lith Albany, 1850.





Nº 4.
ANCIENT ENCLOSURE
OR
BURIAL PLACE

In the Town of Macomb, St. Lawrence Co. on the farm of Wm. P. Houghton – Visited Sepr. 1849. By F. B. Hough.

R. H. Pease, Lithog. Albany

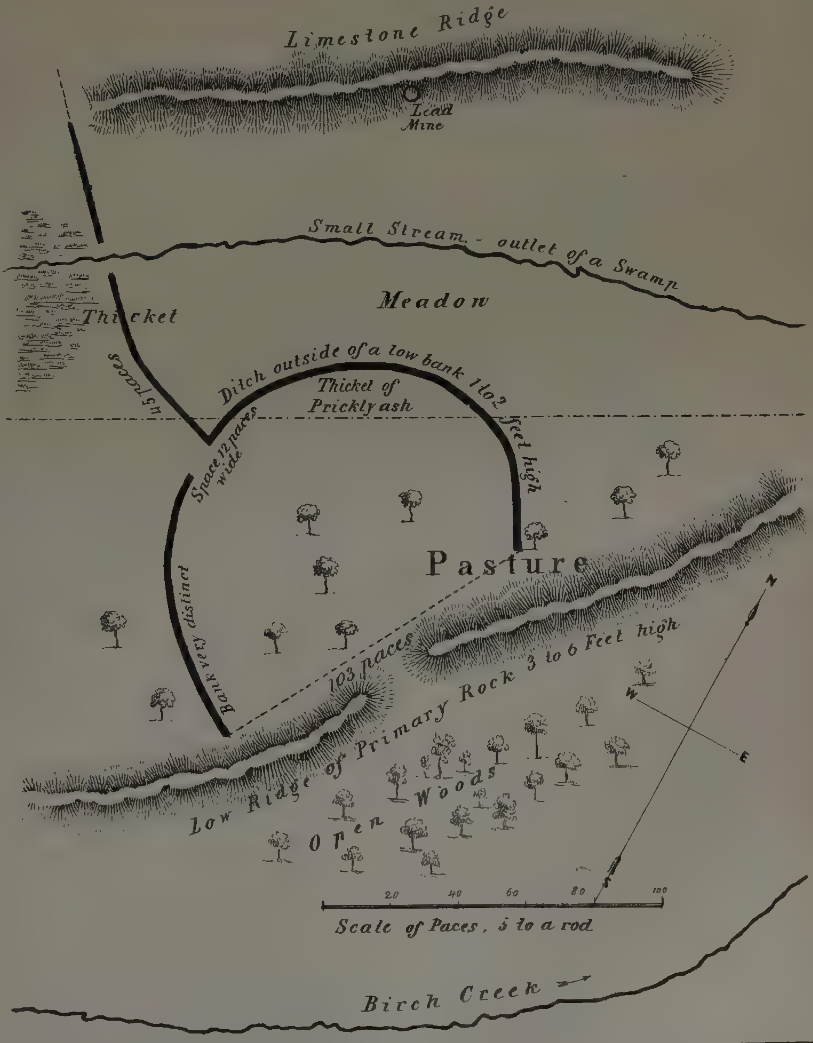
Forest
Birch Creek
Human Bones found in mill pond.
Saw Mill
Trench nearly obliterated on this side
Large quantities of fragments and relics found in this field.
Open Woods
52 Paces.
Ridge of Primary Rock 12 feet above the flat.
Level Meadow
N
S
10
20
40
60
80
100
Scale of Paces.
Road to Pope's Mills 5 miles.
Dwelling of W. P. Houghton.
"Old State Road" to Ogdensbourgh 22 miles.

Nº 5

ANCIENT TRENCH ENCLOSURE
or
BURIAL PLACE

In the town of Macomb St. Lawrence Co. on the farm of Robt. Wilson
Visited and Surveyed Sept 1st 1849 by Franklin B. Hough.

R. H. Pease Lith. Albany, 1850



(H.)

REPORT

ON THE

MINERALOGY OF NEW-YORK;

Comprising Notices of the Additions which have been made since 1842.

BY LEWIS C. BECK, M. D.,

LATE MINERALOGIST TO THE SURVEY OF NEW-YORK.

REPORT.

TO THE HONORABLE THE REGENTS OF THE UNIVERSITY.

Gentlemen:

On the 2d of June, 1836, I was appointed by Governor Marcy, Mineralogist of the Geological Survey of the State, and was entrusted with that part of the work "which relates to an examination, a scientific description, and a chemical analysis of its soils and minerals."

In the discharge of the duty thus assigned to me, I from year to year visited the most important mineral localities in the State, collected many suites of specimens for the General Cabinet and for distribution to the several colleges, and devoted the rest of my time to arranging the materials collected, and to the analysis of such rare and useful products as seemed worthy of particular examination. At the close of the year 1842, the final report of the results of my investigations, under the title of the Mineralogy of New-York, was made to Governor Seward; five annual reports having been previously presented to the Legislature.

Although since the publication of the Mineralogy in 1842, my connection with the survey of the State has ceased, I have still endeavored to keep pace with the progress of this department of science. The additions which I have thus been able to make to the former report are so considerable, that I am induced to offer them to the Regents as a supplement to that work. I consider it as a most fortunate circumstance that the preservation and increase of the invaluable State Cabinet are placed in charge of a Board who duly appreciate the importance of Science, in all its multifarious departments.

I have only further to say, that the arrangement of the following notices is the same as that followed in the Mineralogy of New-York.

Your obedient servant,

LEWIS C. BECK.

Rutgers College, December, 1849.

CLASS I.

ORDER I. COMBUSTIBLE GASES.

SULPHURETTED HYDROGEN.

(Mineralogy of New-York, page 173.)

Since the publication of my account of the Sulphur springs of New-York, several new ones have been discovered; and of those previously known, some have been analyzed. Among these are to be noticed:

The *Bellevue Mineral Spring*, situated two miles below Niagara Falls, a few rods from the Niagara river, where the bank rises perpendicularly from the edge of the stream more than two hundred feet. The water of this spring has been analyzed by Dr. J. Torrey, with the following results in one pint, viz:

Sulphate of lime,	3·68	grains.
Sulphate of magnesia,	1·92	"
Carbonate of magnesia,	0·76	"
Carbonate of lime,	0·32	"
Chloride of sodium,	1·31	"
Traces of iron,		
	7·99	grains.
Sulphuretted hydrogen,	9·33	cub. inches.
Carbonic acid gas,	0·48	"

(*From a pamphlet published by the proprietor of the spring, in* 1842.)

Sylvan, or Iodine Spring, Avon, Livingston county. We have an analysis of the water of this spring, by James R. Chilton, M. D., with the following results in a wine pint, viz:

Sulphate of magnesia,	1·62	grains.
Sulphate of lime,	10·05	"
Chloride of sodium,	12·18	"
Chloride of magnesium,	7·80	"
Carbonate of lime,	3·35	"
Carbonate of magnesia,	2·00	"
Vegetable matter,	0·03	"
Iodine of sodium,		
	37·03	grains.
Sulphuretted hydrogen,	2.58	cub. inches.
Carbonic acid gas,	0·62	"

(*From an Avon paper, containing an account of the springs at that place.*)

Upon this analysis I have to remark, that if the results are correctly stated, it is one of the most notable that has heretofore been published; at least, in so far as the New-York Sulphur Springs are concerned. The amount of solid matter is unusually large, and it must serve to keep up the high reputation of this favorite watering place.

Sulphur Springs at Sharon, Schoharie county. Three springs at Sharon were analyzed by Prof. Lawrence Reid, of New-York, in 1844, and the results published in the Proceedings of the Academy of Natural Sciences of Philadelphia, vol. 2, p. 120, (for October, 1844.) The following are the contents in a wine pint, the original being in reference to a gallon:

White Sulphur Spring, Sharon:

Bicarbonate of magnesia,	3·00 grains.
Sulphate of magnesia,	4·25 "
Sulphate of lime,	10·67 "
Hydrosulphates of magnesia and lime,	0·37 "
Chlorides of sodium and magnesium,	0·34 "
	18·63 grains.
Sulphuretted hydrogen,	2.56 cub. inches.

Blue Sulphur Spring, Sharon:

Bicarbonate of magnesia,	4·00 grains.
Sulphate of magnesia,	0·94 "
Sulphate of lime,	9·69 "
Chlorides of sodium and magnesium,	0·31 "
Solid contents,	14·94

Magnesia Spring, Sharon:

Bicarbonate of magnesia,	3·81 grains.
Sulphate of magnesia,	2·84 "
Sulphate of lime,	9·50 "
Hydrosulphates of magnesia and lime,	0·06 "
Chlorides of sodium and magnesium,	0·38 "
Solid contents,	16·59
Sulphuretted hydrogen,	0·8 cub. inches.

Prof. Reid states that the temperature of each of the above springs' taken at various times during a four days residence, was invariably 48° Fahr., and was not influenced by changes in the temperature of the atmosphere.

Richland Springs, Otsego county. The analysis of two springs by Prof. Reid, is published in the Proceedings of the Philadelphia Academy of Natural Sciences, for October, 1844. The contents in one wine pint are as follows:

	No. 1, A.	No. 3, C.
Bicarbonate of lime,	2·50 grains.	2·50 grains.
Sulphate of magnesia,	1·25 "	1·25 "
Hydrosulphates of magnesia and lime,	3·75 "	3·38 "
Chlorides of magnesium and sodium,	0·25 "	0.31 "
Sulphate of lime,	11·25 "	11.62 "
	19·00 grains.	19·06 grains.
Sulphuretted hydrogen,	2.57 cub. inch.	2.38 cub. inch.

Sulphuretted springs occur at Rosendale, in Ulster county. One of these has acquired some celebrity. It is on the verge of the south shore of the Rondout creek. It is principally remarkable for the large proportion of chloride of sodium which it contains. The following is the result of the analysis of Dr. James R. Chilton, in one pint of the water:

Chloride of sodium,	6·69 grains.
Chloride of magnesium,	0·31 "
Carbonate of magnesia,	0·32 "
Carbonate of lime,	1·18 "
Sulphate of magnesia,	0·67 "
Sulphate of soda,	0·96 "
Sulphate of lime,	0·17 "
Hydrosulphurets of sodium and calcium,	0·26 "
	10·56 grains.
Sulphuretted hydrogen,	1·51 cub. inches.
Carbonic acid gas,	1·75 "

Massena Sulphur Springs. These springs are situated on the banks of the Racket river, in St. Lawrence county. They are somewhat remarkable, and their waters are said to have been very serviceable in cutaneous diseases and in rheumatisms.

Their temperatures are 52° in what is called the warm spring, and 46° in the cold spring.

The following is the composition of these waters in one pint, according to the analyses of Prof. Emmons:

	Warm Spring.	Cold Spring.
Chloride of sodium, - - - -	6·99 grains.	6·20 grains.
Chloride of magnesium, - - -	0·64 "	0·84 "
Chloride of calcium, - - - -	1·03 "	0·47 "
Carbonate of lime, - - - -	2·79 "	1·96 "
Carbonate of ——,* - - - -	1·63 "	1·10 "
Hydrosulphuret of sodium, - -	——	——
Magnesium and organic matter, -	0·00 "	1·87 "
	13·08 grains.	12·44 grains.

There are three springs within thirty feet of each other, and they possess nearly the same properties. The quantity of sulphuretted hydrogen which they contain, is considerable. *Emmons' American Journal of Agriculture and Science, February*, 1847.

Sour Springs. In the Mineralogy of New-York, there are notices of the occurrence of springs charged with sulphuric acid, in various parts of Genesee, Ontario, and Niagara counties. Perhaps the most remarkable of these springs, is that which exists in the southwest corner of the town of Byron, where it occurs in a hillock composed of vegetable matter, which has been charred by the action of the acid. It was for a long time supposed that this might be an acid sulphate of some basis, but an analysis which I made of the water proved it to be nearly pure, although very dilute, sulphuric acid. This has recently been published as a new discovery, and seems at this late day to have excited fresh interest. There is now very little doubt in regard to the origin of the acid in this and similar localities. Dumas has shown that sulphuretted hydrogen, mixed with air by the assistance of a porous body, and especially of tannin, and under the influence of a slightly elevated temperature, is slowly converted into sulphuric acid. It is stated that this oxidation of sulphur is observed in the rooms where they take sulphur baths, at Aix, in Savoy; the linen curtains which in the pools serve to isolate the patients, are very rapidly impregnated with free sulphuric acid, and the fabric is strongly acted on if it is kept without being washed. *Millon and Reiset's Annuaire, for* 1847.

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* In the published analysis, "Carbonate of lime" is twice repeated, which is undoubtedly an error of the press. Carbonate of magnesia may have been intended.

CARBURETTED HYDROGEN.

(Mineralogy of New-York, pages 128 and 172.)

The work as above quoted, contains a full account of the occurrence of this gas in various parts of the State. Subsequent researches have shed very little further light upon the question of its origin. We have indeed the negative evidence that in the western part of the State, where its evolution is most abundant, it does not arise from the decomposition of coal; and Mr. Hall asserts that "the amount of organic matter, both animal and vegetable, known in this rock, (Medina sandstone) is so exceedingly small, that it could scarcely be supposed to give rise to the constant emission of this gas. The impervious nature of the lower part of the mass, and the absence of fossils in the next rock below, would preclude the idea of its origin in that direction, as there are no disturbances known in the district." *Report of the Geology of the Fourth Geological District*, p. 44.

One of these gas springs is noticed by Prof. Mather, as occurring at Haverstraw, in Rockland county. *Report on the Geology of the First District*, p. 107.

ORDER II. NON-COMBUSTIBLE GASES.

NITROGEN.

(Mineralogy of New-York, pages 133 and 174.)

Mr. Hall remarks, "that there is scarcely a doubt but the Canoga springs have their origin along a line of fault or fracture in the strata. Those of Chateaugay, in Franklin county, are near the junction of the granite and Potsdam sandstone, and in the calciferous sandrock." *Report on the Geology of the Fourth District*, p. 309.

CARBONIC ACID.

(Mineralogy of New-York, page 175.)

ACIDULOUS, OR CARBONATED SPRINGS.

Congress Spring, Saratoga. In the appendix to Fownes' Chemistry, 1845, Phila. edition, I find a table of the anhydrous ingredients in one pound Troy of the water of this spring, by Dr. Schweitzer. The number of substances there given is much larger than that heretofore detected in these waters by other chemists. Among these are, carbonate of strontia, protocarbonate of manganese, sulphate of potassa, nitrate of magnesia and chloride of ammonium; which are rarely met with under these circumstances. It is to be regretted that the fluid quantity of water analyzed by Dr. Schweitzer is not stated. The whole analysis differs greatly from those previously published.

Empire Spring, Saratoga. This is another of those, so called, new discoveries which are every few years made at Saratoga. That the proprietors of these new springs should find it to their interest to laud their waters as possessing remarkable properties, is not perhaps surprising. But a little reflection must satisfy us that there can be no great difference in the composition of springs which undoubtedly have a common origin.

The spring which has received the above name, was, it is said, partially made known in 1846, under that of *New Congress Spring*. According to the analysis of Dr. Emmons, the saline matters contained in one pint of this water, are as follows:

Chloride of sodium,	33·71 grains.
Bicarbonate of soda,	3·85 "
Bicarbonate of lime,	17.73 "
Bicarbonate of magnesia,	5·25 "
Hydriodate of soda,	1·50 "
	62·04 grains.

The peculiarities of this water are said be the remarkably large proportion of hydriodate of soda, and its freedom from any salt of iron. I am apprehensive, however, that the proportion of iodine may be overstated in the above table, as I have been unable to detect its presence by the most delicate tests, either in the *raw* water, or in a portion partially reduced by evaporation.

CLASS II.

LIQUID MINERALS, NOT COMBUSTIBLE.

HYDROUS SULPHURIC ACID.

Under the head Sulphuretted Hydrogen, I have already introduced some remarks in regard to the occurrence of this acid in a dilute form, in Western New-York.

CLASS III.

COMBUSTIBLE MINERALS, NOT GASEOUS.

SULPHUR.

(Mineralogy of New-York, page 181.)

Native sulphur is of common occurrence in the small cavities in the encrinital limestone at the Cold Spring quarries, two miles east of Lockport, Niagara county, *Report on the Geol. 4th Dist., p* 99.

BITUMEN.

(Mineralogy of New-York, page 182.)

Mr. Hall informs us that fluid bitumen is of common occurrence in the Genesee slate, and with it a bright blue fluid and a substance like spermaceti, but softer. These are volatile, and it has been impossible to preserve any of them. The fluid bitumen and the blue fluid have likewise been noticed in septaria, in the Marcellus slate. *Rep. on the Geology 4th Dist. p.* 221.

Mr. Hall has a cut of the Oil Spring in Freedom, Cattaraugus county. He remarks that the origin of the spring is doubtless from the bituminous matter which is carried down by the water as it percolates through the interstices of the sandstone. *Rep. on the Geol. 4th Dist. p.* 310.

GRAPHITE.

(Mineralogy of New-York, page 186.)

Several localities of this useful mineral occur in Northern New-York, which it is probable will yield an abundant supply. The Ticonderoga deposits are already turned to considerable profit. In the village of Keeseville, at a short distance from these deposits, there are three manufactories of pencil points, which send out several millions annually. Large quantities of the mineral in powder are also consumed for stove blacking, for which purpose it is considered by many equal to the celebrated "British Lustre."

A new method has been recently proposed by Profs. R. E. and W. B. Rogers, for determining the carbon in native and artificial Graphites. For the details, the reader is referred to *Silliman's Journal, May*, 1848; *vol* 5, *N. S., p.* 352.

ANTHRACITE.

(Mineralogy of New-York, page 188.)

It is believed that nothing has occurred since the publication of the Mineralogy of New-York, to change the views which were then expressed concerning the very unimportant character of the strata of anthracite which have been found in this State. The anthracite in Herkimer and Montgomery counties, is found in the calciferous sandstone, and it appears in the form of drops or buttons; from which Mr. Vanuxem inferred that its previous nature was bituminous, and that the greater part of the rock had been subjected to heat, not dry, but humid, and which accounts for the numerous siliceous and other products which are common to it. Analysis of this anthracite gave carbon, 86·50; water, 11·50; cream-colored ash, consisting of silica, 2·00. The proportion of water is greater than that obtained from the anthracite of the coal series. *Rep. on the Geol. 3d Dist. p.* 34.

CLASS IV.

ALKALINE MINERALS.

COMMON SALT.

(Mineralogy of New-York, pages 119 and 198.)

This is a product of great importance to the State, and I shall therefore occupy some space in presenting a summary of the information which has accumulated since the publication of the Mineralogy of New-York.

Crystalline form. Common salt sometimes occurs in hopper-form crystals, produced by the symmetrical agglomeration of a multitude of little cubes. The largest surface of these crystals is first formed near the top of the solution. The upper part rises, the solution is thus weakened in the immediate vicinity, and the next row of particles retreats from the margin. The same explanation applies to the succeeding rows.

The manufacture of salt at Syracuse, and the surrounding villages in Onondaga county, has been steadily increasing in importance. The annual produce of the works might still be greatly extended, although it has already reached the considerable amount of nearly 4,000,000 bushels annually. The quality of the salt has, also, I have reason to believe, been generally improved. Complaints, however, are yet sometimes made on this score, and the prejudice which was formerly entertained against the "Onondaga salt," has not been entirely removed.

More than twenty years since, my attention was directed to the salines of Onondaga county, when I made an analysis of the water, and carefully examined the various modes of manufacturing salt which were adopted. I have at various times subsequently visited these salines, and have devoted much time to the study of all the facts which I supposed would have an influence in improving the manufacture of salt and of increasing the value of the springs. All the information which I collected up to 1842, was embodied in my work. The following additional facts are conceived to be of sufficient interest to be here introduced.

In June, 1844, I analyzed two specimens of salt, the one from the "Hope Factory," in Onondaga county, and the other the "Liverpool, or Ashton." The composition in 1,000 grains was as follows:

Liverpool, or Ashton:

Insoluble matters,	0·25
Sulphate of lime,	11·65
Sulphate of magnesia,	1·56
Chloride of magnesium,	trace.
Chloride of sodium, (*pure salt*)	986·54
	1,000·00

Hope Factory:

Insoluble matters,	0·15
Sulphate of lime,	11·06
Chloride of calcium,	0·38
Chloride of sodium, (*pure salt*)	988·41
	1,000·00

These results, together with those previously given, sufficiently show the superior purity of the samples of Onondaga salt. Their correctness is generally confirmed by the analyses executed by Dr. Emmons, and of which the results are published in the Transactions of the New-York State Agricultural Society, for 1847, p. 281. The complaints which have been made in regard to this salt, can only have arisen from carelessness in the manufacture. The presence of an undue quantity of moisture, and of certain deliquescent salts, probably constitute the principal grounds of objection. No pains should be spared by the manufacturers to ensure the perfect dryness of the salt, before it is put up into barrels. It should be recollected that sometimes the character of the salt is judged of by the use of a single barrel, which may have been carelessly prepared. Perhaps it is the fact that the Onondaga salt is manufactured by so many different individuals, and is wanting in uniformity, that has operated injuriously and caused much of the difficulty. That many of the samples, and especially those obtained by solar evaporation, are among the purest found in market, there can be little doubt. And the statement which has been made that "the *Salina salt*, after repeated trials, has been entirely thrown aside by the best western butter makers," must have arisen from the fact that there is still a want of due attention on the part of some of the manufacturers, and that the system of inspection is not so perfect as it should be.

The Transactions of the American Institute for 1847–48, contain a valuable communication from Mr. E. Meriam, who has devoted much time to the study of this important article. His paper embodies much information in regard to the quantity of salt imported into the United States, and manufactured at the most considerable Salines, viz: those of New-York and of Virginia.

In adverting to the prejudice which has been entertained against American salt, Mr. Meriam exhibits the subject, to which I have repeatedly directed the attention of the manufacturers, in a striking point of view. The quality of any sample of salt does not so much depend upon the greater proportion of chloride of sodium, (pure salt) as upon the nature of the other saline matters which are mixed with it. He illustrates this fact by the following statement: "If two parcels of sugar are to be estimated as to their value for family use, one containing 85 per cent pure sugar, and 15 per cent pure silica, (sand;) the other containing 99 per cent pure sugar, and 1 per cent *sulphate of iron*, (common copperas;) the injury done in the latter case would be far greater than in the former. The 1 per cent of sulphate of iron would render the sugar unfit for use, while the 15 per cent of silica would merely reduce its value in that proportion. So it is in regard to the samples of salt. A small proportion of the deliquescing chlorides, (chlorides of calcium and magnesium) by constantly rendering the salt moist, is a most injurious impurity; while sulphate of lime or gypsum, although in considerable quantity, detracts very little from the real value of the salt."* The suggestion, therefore, which I have from time to time made in regard to the removal of these deliquescing chlorides is, of all others, worthy of attention, and I am satisfied that if this was in all cases carefully attended to, no complaint would be heard in regard to the western salt.

Brine Spring, Galen, Wayne county. Some time during the year 1843, a salt spring was opened at a place called Lockpit, within thirty rods of the Erie canal, about eight miles west of Montezuma, and on the westerly border of the great Montezuma marsh. A boring was executed here which attained the depth of about 400 feet. The water obtained from this well is more highly charged with saline matter than any which has heretofore fallen under my notice. The following are the results of an analysis which I made in November, 1843:

1000 grains of the brine contain 247·50 grains of perfectly dry saline matter. Of these 247·50 grains, 59·66 grains consist of chloride of calcium, mixed with very small proportions of chloride of magnesium, sulphate of lime, and oxide of iron. The remaining 187·84 grains are chloride of sodium, or pure common salt.

The proportions in 100 grains of the Lockpit brine, therefore, are as follows, viz:

Chloride of calcium and other impurities, as above,	5·97
Chloride of sodium (pure salt) - - -	18·78
Water, - - - - - - - -	75·25
	100·00

The richest Onondaga brine that I have examined contains, in 100 grains:

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[*] Mr. Meriam seems to take rather too much credit to himself for this very plain proposition, which he thinks many "excellent chemists" have overlooked. But this is a matter concerning which no chemist can be mistaken. All agree that the great objection to the Onondaga salt, arises from the presence of the deliquescing chlorides. But this is entirely owing to the neglect of the manufacturer. With care they can all be removed, and hence if the proportion of chloride of sodium is large, as in the case of the Lockpit brine, even if it is mixed with a large proportion of these chlorides, salt may still be manufactured from it, by a close attention to the proper drainage of the salt, and washing it with saturated brine. No better evidence of the correctness of this statement need be given, than the fact that sea water, and the brines from which the best foreign varieties of salt are manufactured, contain considerable proportions of these earthy chlorides. Indeed the Onondaga brines are, perhaps, as free from them as any that are elsewhere used.

Sulphate of lime, &c.,	0·85
Common salt,	17·35
Water,	81·80
	100·00

The Lockpit sample, therefore, contains a larger proportion of common salt, also of earthy chlorides, usually denominated impurities. Twenty-eight to thirty gallons of brine of this strength, would yield a bushel of merchantable salt.

If this brine should be abundant and the location favorable, salt might be advantageously manufactured from it by the solar evaporation process. Should the mode by boiling be pursued, great care will be required in removing the deliquescent chlorides, by long drainage of the salt, or by washing it with strong brine before it is put up for use.

With this brine is associated small, but very beautiful and transparent crystals of selenite. They seem as if deposited by a water strongly charged with the sulphate of lime. This will account for the small quantity of this salt which is found in the brine. A particular description of these crystals will be given under the appropriate head.

Brine Spring, of York, Livingston county. Prof. Dewey states that this brine gives evidence of a large proportion of iodine, on the application of the usual tests. (*Hall's Report on the Geol. 4th Dist.*, *p.* 315.) I have had no opportunity of repeating these experiments. It is very desirable to ascertain the proportion in which this substance is found.

ALKALINE EARTHY MINERALS.

CELESTINE.

(Mineralogy of New-York, page 210.)

To the localities of this somewhat rare mineral, I may add its occurrence in projecting points on black marble, at Watertown, Jefferson county. (*Emmons' Rep. on the Geol. 2d Dist.*, *p.* 111.) The fibrous variety described as occurring in the town of Stark, Herkimer county, exactly resembles that from Tornberg, in Saxony.

STRONTIANITE.

(Mineralogy of New-York, page 212.)

This interesting mineral, of which we have heretofore had only one or two localities in this State, occurs, according to F. B. Hough, in considerable quantities in the town of Theresa, Jefferson county. (*Sil-*

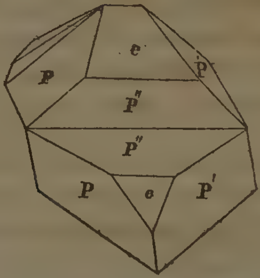
liman's Journal, *January*, 1848.) Massive strontianite is also said to have been found by Mr. James Heron, at Warwick, in Orange county. *Dana's Mineralogy*, 2*d ed.*, *p.* 254.

CALCAREOUS SPAR.

(Mineralogy of New-York, page 215.)

Of the crystallized varieties of this mineral, the most interesting localities which have heretofore been found, perhaps, in any part of the world, exist in this State. The finest specimens have been obtained at the mines of Rossie, St. Lawrence county. One gigantic specimen in the cabinet of Prof. B. Silliman, Jr., weighs 165 pounds, and is nearly transparent. *Dana's Mineralogy*, 2*d ed.*

The accompanying cut is the figure of a twin from Rossie, in the collection of Mr. Alger, of more than a foot in length. *Alger's Phillips*, *page* 265.



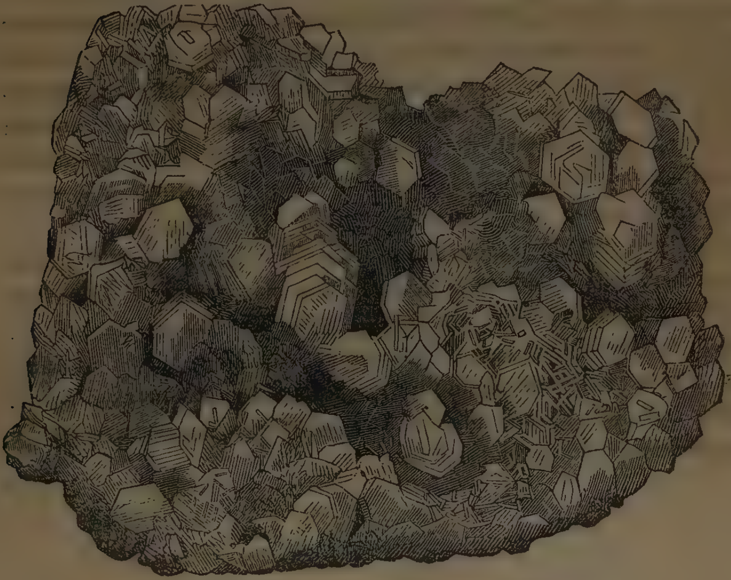
Mr. Dana has given a figure of a crystal differing from any of those contained in my report. *See Sill. Jour.*, xlvi. p. 33.

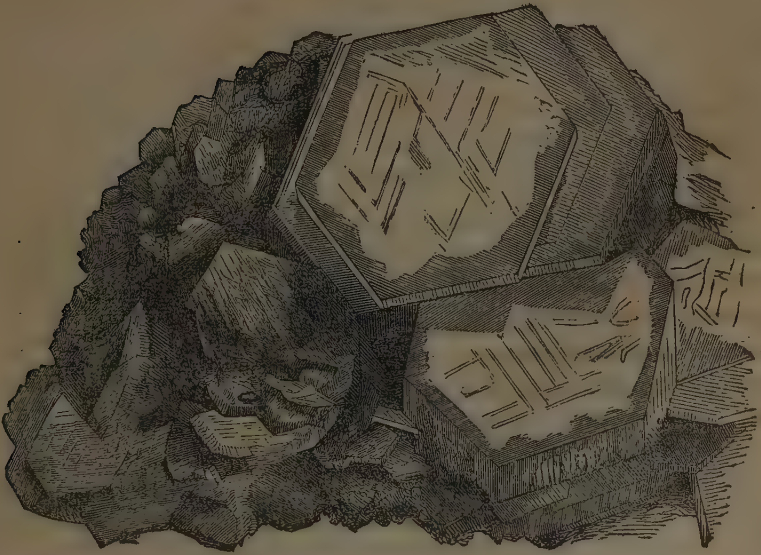
In regard to the form of the calcareous spar from Rossie, Mr. Ashmead has remarked, that in reducing specimens to convenient size for the cabinet, he observed that some of the fractured crystals were susceptible of mechanical division in different directions from those of the planes of a rhombohedron. He succeeded in obtaining as a nucleus, a solid, bounded by six isosceles triangular planes, of similar lustre, or two obtuse, three-sided pyramids, placed base to base; it has but one axis, passing through opposite solid angles; assuming the axis to be vertical, the base is an equilateral triangle. As the faces are not parallel, but inclined to each other, it is susceptible of perfect cleavage in six directions.

"The solid angle of the apex is similar to the obtuse solid angle of the rhombohedron, therefore, by truncating the alternate solid angles of the rhombohedron, this solid is produced." *Proceedings of the Academy of Nat. Scien. of Phila.*, *Feb.* 8, 1848.

Some of the crystals from the Belmont mine, in St. Lawrence, weigh over a hundred pounds. The colors are purple, straw yellow, and limpid. *Emmons' Rep. on the Geol. 2d Dist.*, *p.* 365.

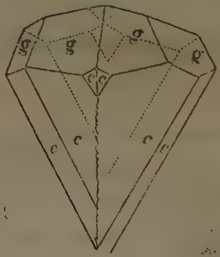
Specimens of Calcareous spar, presented by John E. Henry.





A novelty in the occurrence of calcareous spar, is the recent discovery of groups of crystals in the form of flat, six-sided tables, of various sizes, from half an inch to two inches in diameter. These crystals have been found in the coarse granite near St. Anthony's Nose, on the Hudson river, during the excavations for the railroad on the banks of that stream. The accompanying cuts are drawn from a specimen presented to the State Cabinet by John E. Henry, which is one of the best that I have seen from that locality. It is more than a foot in length and breadth. I have received several fine specimens from Mr. Cyrus Fountain, of Peekskill, who has been for several years actively engaged in collecting the minerals of Westchester and Putnam counties; and to whom I acknowledge myself indebted for many interesting facts, which he has from time to time communicated.

In addition to the numerous forms heretofore figured from Tompkins quarry, in Rockland county, several others may be added, as having been found at that locality. Among these are the *dodécaèdre*, of Haüy, (Fig. 71, of the Mineralogy of New-York,) and several of its modifications. Also a twin of the same form, represented in the annexed figure. In other crystals, the solid angle of a rhombohedron passes through the terminal planes of a six-sided prism.



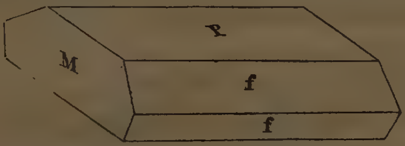
DOLOMITE.

The following mode of distinguishing between dolomite and carbonate of lime, is proposed by M. Zehmen: Pulverize a small quantity of the mineral, and subject it to the heat of a common alcohol lamp, in a plantinum spoon. The carbonate of lime acquires, by this treatment, a certain degree of coherence; while the powder of dolomite, which loses carbonic acid, remains without coherence. *Berzelius' Report for* 1847.

GYPSUM.

(Mineralogy of New-York, page 237.

Beautiful and very perfect crystals of selenite, have been obtained from the deep boring at Lockpit, in Wayne county. They are found imbedded in gypseous marl, which contains chlorides of sodium and magnesium; the whole probably formed by the evaporation of the brine. The crystals are six-sided prisms, from half a line to two lines in diameter, and from one-fourth to five eighths of an inch in length. They are extended in the direction of *f f; P* on *f*, 124° 41′ 43″; *f* on *f*, 110° 36′ 34″. They frequently exhibit the primary plane *M*.



A careful trial yielded 21·20 per cent of water.

Several localities of this mineral occur, according to Prof. Mather, in the 1st Geological District, but none of them are of special importance. *See Mather's Rep.*, *p.* 84.

APATITE.

(Mineralogy of New-York, page 239.)

To the localities of this interesting mineral, I have to add its occurrence in Putnam Valley, Putnam county; for which discovery we are indebted to Mr. Cyrus Fountain, of Peekskill.

In the Mineralogy of New-York, I noticed the occurrence of apatite as an associate of magnetic iron ore, at several mines in Essex county. Prof. Emmons states that it is also found similarly at the Rutgers mine, in Clinton county. It is sometimes in large crystals upon the walls of the vein, but it is so extremely brittle that it will be very difficult to procure it in a good form for the cabinet. *Amer. Quart. Jour.*, i. *p.* 60.

Some difference of opinion still prevails, in regard to the modes in which apatite has been formed. Mr. J. D. Dana maintains (*Sill. Jour.* xlvii. 135,) that the apatite found in white limestones, although now in superbly finished crystals, originated from organic structures, from corals, which, after being enclosed in their rocky prison, were exposed to intense heat, and hence were decomposed, &c. Dr. Emmons objects to this view, as a general theory of the formation, and in support of his objections adduces the occurrence of apatite in iron ore, and in gneiss, mica-slate, and granite; in which we have, at least, no evidence that these organic structures have existed. Again, the limestones which are the richest in phosphate of lime, are always enclosed in granite or gneiss. *Amer. Quar. Jour.*, i. p. 63, 64.

These objections seem to me to be valid. I can see no reason why phosphate of lime, in the form of apatite, may not be an original product, as well as fluor spar, or the magnetic iron ore itself. It is an overstrained view, to refer the formation of every mineral to chemical action exerted upon some previously existing body. And after all, it only removes the difficulty in regard to the formation of these substances one step further, for it may be fairly asked, whence the phosphate of lime in the coral was derived?

FLUOR SPAR.

(Mineralogy of New-York, page 243.)

I have only to add the occurrence of this mineral in small quantities in Gouverneur, St. Lawrence county, reported by Dr. Emmons, and which had escaped my notice in the explorations which I made in that county. *See Rep. on the Geol. 2d Dist. p.* 366.

I may also state, as connected with the general history of this mineral, that it has been found in many of our common waters, and that its existence in recent and fossil bones, has been attributed to this source. See the papers of J. Middleton, Esq., and of Dr. Daubeny, (*Lond. Ed., and Dub. Phil. Mag.*, vol. xxv., p. 14 and 122.)

HYDRAULIC LIMESTONE.

(Mineralogy of New-York, page 256.)

Dr. C. T. Jackson's analysis of the Rosendale hydraulic limestone and cement, will be found in the *Trans. of the Amer. Ass. of Geologists, for* 1845, *p.* 48.

The following fact noticed by Berzelius, throws some light upon the chemical nature of hydraulic limestones: "When muriatic acid is added to hydraulic mortar, which has been under water three months and reduced to powder, it gelatinizes at the end of a few minutes. Hence it is inferred that there is formed a double silicate of lime and alumina, a native zeolite, which gives solidity to the mortar." *Berzelius' Ann. Report for* 1844.

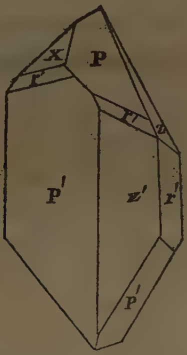
EARTHY MINERALS.

SILICA.

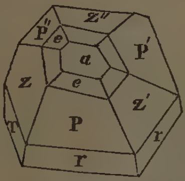
QUARTZ.

(Mineralogy of New-York, page 257.)

To the full account which is contained in the Mineralogy of New-York, of our remarkable localities of quartz, I have still to make several additions. Herkimer county has furnished such an almost countless number of specimens, which have been distributed among the various cabinets, that it is by no means strange that new and interesting crystalline forms are from time to time discovered. The figure annexed is from Middleville, and is copied from Mr. Alger's edition of Phillips' Mineralogy, (page 6.) It is similar to the fig. 133, in the Mineralogy of New-York, which is from a crystal found in Greene county.

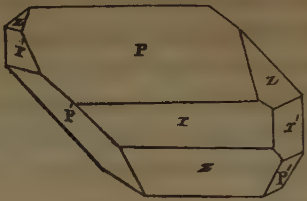


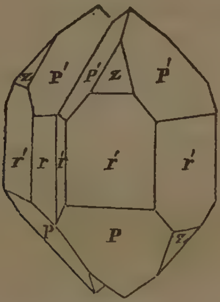
Subsequent examination of the crystalline forms from this county, has led me to doubt whether fig. 152, of the Mineralogy of New-York, and fig. 9 *a*, (page 409) of Dana's Mineralogy, 2d edition, are really true modifications of this mineral. The first was copied from Shepard's Mineralogy. The faces *o* and *a*, as represented in these figures, seem to be accidental, and to have been formed by the pressure of some por-



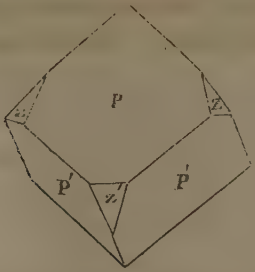
tion of the matrix of the crystal during the time of its formation. Individuals exhibiting this peculiarity, are not uncommon, and in some the number of these *so called* planes, is still further increased.

Since the publication of the mineralogy of New-York, I have received sundry specimens of quartz crystals from St. Johnsville, in Montgomery county, collected by Mr. Israel Smith, Jr. One of these is similar to fig. 156, from Middleville, but with the planes, z and z, more extended. Also No. 161, of the Mineralogy, and several other more common forms, but the crystals are usually quite small.



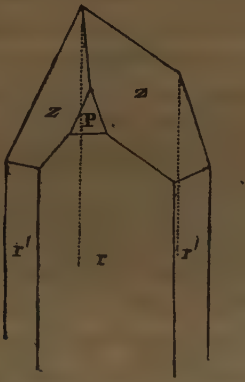


To the figures of crystals heretofore found in the town of Edwards, St. Lawrence county, I have to add the one now introduced, which occurs in a group of dodecahedrons, for which that locality is so remarkable. It is the same form as that from Ulster county, fig. 172, of my Mineralogy. Some of these crystals have blades of specular iron



diffused through them, like the masses of anthracite found in those from Herkimer county. Occasionally they appear almost like crystals of specular iron itself, but with the form of quartz. It is probably to the disintegration of this ore that the ochrey and cavernous appearance of these crystals is to be ascribed.

The Natural bridge, in Lewis county, has furnished opaque crystals of quartz of considerable size, and presenting some interesting modifications. To those already given, I can now add that which is here figured, and which is remarkable, as exhibiting only three terminal faces.



According to Vanuxem, *hyalite* is found in the Potsdam sandstone, half a mile below Canajoharie, in Montgomery county. *Report on the Geol. 4th Dist., p.* 29.

TABULAR SPAR.

(Mineralogy of New-York, page 270.)

Dr. Emmons states that fine specimens of this rather rare mineral are found in Keene, Essex county. *Geology of the 2d Dist., p.* 286.

NEMALITE.

(Mineralogy of New-York, page 272.)

Prof. Connell has recently analyzed this mineral. His results are very different from those of Dr. Thomson, but he operated upon a very small portion. They are as follows, viz: Magnesia, 57·86; protoxide of iron, 2·84; silica, 0·80; water, 27·96; carbonic acid, 10·00; = 99·46. He supposes the formula to be, $5\,MgO, HO + MgO, CO_2HO$.

This gives: magnesia, 61·67; water, 27·24; carbonic acid, 11·09;=100. It effervesces sensibly in acids, and contains only a minute quantity of silica. *Proceedings of the British Association, for* 1846.

I cannot but think that the specimen analyzed by Prof. Connell must have been impure. His formula is too complex.

A more recent analysis of this mineral by Mr. J. D. Whitney, shows it to be a fibrous variety of the hydrate of magnesia, or brucite. It afforded him magnesia, 62·89; protoxide of iron, 4·65; carbonic acid, 4·10; water, 28·36. A small portion of magnesia is replaced by protoxide of iron. The formula of brucite $(\dot{\mathrm{Mg}}\,\dot{\mathrm{H}})$ requires magnesia, 69·67; water, 30·33. *Jour. Bost. Soc. Nat. Hist.* 1849, *p.* 36.

SERPENTINE.

(Mineralogy of New-York, page 272.)

Subsequent examination has satisfied me of the protean forms of this mineral, and would lead me to receive with distrust the *dermatin* and *kypholite* proposed by Breithaupt, and the *hydrophite* and *picrophyll* of Svanberg. *Marmolite* should certainly be united with serpentine, and the same may be said of all the minerals included under the general name of *magnesite.*

The supposed crystalline forms of this mineral, are, probably, in most cases, pseudomorphs. Some of these have heretofore been noticed. Kersten has examined a specimen of serpentine from Schwarzenberg, which is remarkable, as being a pseudomorph in the crystalline form of garnet. The crystals are blackish green, and contain a mixture of 82·50 of serpentine, and 17·50 magnetic iron ore, which can be separated by the magnet. The serpentine was composed of silicic acid, 41·50; magnesia, 40·34; protoxide of iron, 4·10; oxide of manganese, 0·50; soda, 0·42; water, 12·87. *Berzelius' Annual Report*, 1847.

Upon a comparison of specimens, I find that some of the varieties of serpentine from Phillipstown, (Heustis' farm) in Putnam county, closely resemble those from Smithfield, Rhode Island, and which are usually labelled *nephrite.*

CHONDRODITE.

(Mineralogy of New-York, page 281.)

Two new localities of this mineral are to be added to those heretofore given. The one in Schroon, Essex county, and the other in Carmel, Putnam county.

I have also to add, that Dana (*Mineralogy, 2d ed., p.* 388,) gives a figure of a crystal of chondrodite, drawn from a specimen in the collection of J. A. Clay, Esq., of Philadelphia, and obtained in Orange county, New-York.

PYROXENE.

(Mineralogy of New-York, page 286.)

A fine locality of this mineral has been found in the town of Fine, St. Lawrence county. The crystals, though not perfectly smooth, are still well formed, and more than a yard in length! *Emmons' Jour. of Agriculture*, iii., p. 158.

Pyroxene, as is well known, presents a great variety of forms; distinct names have been applied to many of these varieties, and some have even been described as distinct species. The researches of mineralogical chemists have resulted in the reduction of many of these supposed distinct minerals to one species. Dana has, I think, carried this further than any author; for he not only places under *pyroxene*, diopside, pyrgom, sahlite, coccolite, jeffersonite, and hedenbergite, in which I concur, but he also ranges with it diallage and hypersthene; concerning the propriety of which I still have much doubt. If this wide scope is given to the mineral in question, there seems to be no reason why its limits should not be still further extended, and made to embace many other species.

Hudsonite, proposed in the Mineralogy of New-York as a new species, (p. 405) is thought by Dana to belong to the pyroxene family, and to be very near to hedenbergite. It is certainly more closely allied to the latter mineral than to any other, although it is remarkable for the large per centage of oxide of iron which it contains. The circumstance of its being found in a gangue of quartz, from which it is easily separable, induced me to believe that this was not an accidental ingredient. I regret that I have not yet obtained any specimens which admit the determination of its crystalline form, as this would conclusively settle the point in dispute. Its cleavages, as far as they can be determined, certainly resemble those of pyroxene. But chemical composition ought also to have some weight in the determination of specific distinctions. No one, however, who has a just appreciation of the true interests of science, should hesitate to abandon an opinion which he has advanced, when it is found to be inconsistent with facts subsequently made known. The useless multiplication of species, and the introduction of arbitrary names in natural history, is especially to be avoided.

From an article in the Newburgh Telegraph, it appears that the Rev. R. G. Armstrong has obtained from a locality in the town of Monroe, Orange county, a crystal of pyroxene nearly eight inches in length, and fifteen and a half in circumference. This is one of the largest crystals of this mineral heretofore noticed. It may be remarked, however, that these specimens from Orange county, although remarkable for their size, want the finish which give such beauty to the crystals from some other localities.

In regard to the steatitic-pyroxene, the Rensselaerite of Dr. Emmons, I have nothing further to add, except a reference to the localities cited in the *Report of the Geol. 2d Dist., pages* 350 *and* 365. I believe it is now generally admitted that the views presented in my Mineralogy (p. 297) are correct. It is undoubtedly a mixed mineral, containing steatite or serpentine in variable proportions, but usually presenting the cleavages of pyroxene. It is in fact a pseudomorph on a large scale, as it sometimes occurs in mountain masses.

HORNBLENDE.

(Mineralogy of New-York, page 298.)

This species is so abundant, that with the increasing attention paid to our mineral resources, new localities must from time to time be discovered. No remarkable crystalline forms, however, have come to my knowledge, since the publication of the Mineralogy of New-York. Some researches have been made by Dr. Blum, on the pseudomorphs of hornblende and other minerals, which are worthy of being carefully studied by the mineralogist. A fact mentioned by him, which particularly interests us, is that of a greenish white augite, (pyroxene) in the Leonard collection, which he supposes to have undergone a change from hornblende. This he says is indicated, both by its structure and analysis. *See Sill. Jour.*, xlviii., p. 78.

The analysis of a variety of asbestus, (rockwood) from Staten Island, gave the following results, viz: Silica, 55·20; magnesia, 30·73; oxide of iron, 11·82; water, 2·25. The specimen is of the compact kind, and had a greenish color, with a kind of cleavage resembling that of crystalline hornblende. The above composition is very near that of a specimen of rockwood from the Tyrol, analyzed by Dr. T. Thompson.

Mountain cork and mountain leather, usually placed under hornblende, probably belong to some other species, if not themselves distinct.

HYPERSTHENE.

(Mineralogy of New-York, page 309.)

Damour has published an analysis of a specimen of this mineral, from Labrador; the following are the results: Silica, 51·36; protoxide of iron, 21·27; magnesia, 21·31; lime, 3·09; protoxide of manganese, 1·30; alumina, 0·37. *Phil. Mag., April*, 1845.

A specimen from Orange county, known by the name of hypersthene, is foliated, has a brownish color, and is not unlike feldspar in its appearance. Upon analysis it was found to contain the following ingredients, viz: Silica, 59·50; oxide of iron, 12·00; magnesia, 27·75; (not a trace of lime.) In composition this mineral is almost indentical with Klaproth's bronzite, the hemiprismatic schiller spar of Jameson, (*Man. of Mineralogy, p.* 166,) and with the anthophyllite of Thompson, (*Outlines of Minerology, &c.*, ii., p. 206.) Some obscurity, therefore, still rests upon this species. As before stated, Dana unites hypersthene with pyroxene; but this, it seems to me, is scarcely allowable in the present state of our knowledge.

SPINELLE.

(Mineralogy of New-York, page 315.)

To the localities of this interesting mineral heretofore given, may be added its occurrence in Schroon, Essex county, in pink-colored crystals. (*Emmons' Rep. on the Geol. 2d Dist., p.* 227.) I have also received regular octahedrons of spinelle, having a black color, from Carmel, in Putnam county.

I must again refer to the paper of Dr. Blum, on pseudomorphous minerals, (*Sill. Jour.*, xlviii., p. 73,) for a notice of the soft spinelles described in my report, (p. 318.)

AUTOMALITE.

(Mineralogy of New-York, page 319.)

In regard to this mineral, whose existence as a New-York species is very doubtful, I have to state that recent examinations have rendered it probable that it is identical with dysluite. The two minerals pass into each other, and the difference in hardness, color, specific gravity, &c., can thus be accounted for by the well known fact of the isomorphous replacement of the constituents of certain minerals, the crystalline forms of which remain the same. *See Memoirs Bost. Nat. Hist. Soc.* ii. p. 88

GIBBSITE.

(Mineralogy of New-York, page 320.)

Hermann, of St. Petersburg, has announced that the constitution of gibbsite was that of a hydrous phosphate of alumina, and that the composition assigned to gibbsite by Torrey, belonged only to the hydrargillite of Rose. Prof. B. Silliman, Jr., has repeated the analysis of this mineral, from Richmond, Mass., and finds it to correspond to the formula first given, which requires:

Alumina, - - - - - - - -	65·800
Water, - - - - - - - -	34·200
	100·000

And the mean results of his analyses correspond very closely to the calculated per centages. The phosphoric acid is like the magnesia, iron and silica, contained in gibbsite, only as a contingent impurity. The gibbsite, he says, is sometimes mixed with allophane, which will account for the presence of silica; and he thinks the silica mentioned by Dr. T. Thomson, in his analysis, was derived from the same intermixture of the two species. There is now little doubt that the hydrargillite of Rose, and gibbsite, are identical; the former is the crystalline, the latter the amorphous variety of the same species. *Sill. Jour. July*, 1849, *page* 411.

IDOCRASE.

(Mineralogy of New-York, page 321.)

Subsequent examination has satisfied me that the mineral called idocrase, from Hall's, on Muscolunge lake, in Jefferson county, is pyroxene. The measurement of the primary is, as nearly as can be determined, 87° and 93°; the replacing planes, 134°. Its color, although peculiar, is not unlike that of the pyroxene found on the Rossie turnpike, two miles from the village of Oxbow, in Jefferson county.

GARNET.

(Mineralogy of New-York, page 323.)

The variety colophonite, is reported by Dr. Emmons as being abundant at Johnsburg, Warren county. *Report on the Geology 2d District, page* 192.

SCAPOLITE.

(Mineralogy of New-York, page 329.)

Imperfect crystals of scapolite have been found in Putnam Valley, Putnam county, by Mr. Cyrus Fountain.

In regard to the specimens heretofore described, I have to remark, that some of those from Brush's, in Monroe, Orange county, resemble the wernerite, from Franklin, N. J. They are in the form of small, irregularly crystallized masses, and are imbedded in a reddish carbonate of lime. I formerly supposed the mineral to be apatite. The following notices may, also, be here introduced:

The specimens from Fall Hill, in Orange county, melt into a darker colored globule than any others which I have tried. They are associated with a dark colored pyroxene, which will account for their larger proportion of oxide of iron.

Analysis has proved that the speciments of scapolite from Ticonderoga, in Essex county, are similar in composition to some of the foreign ones, although the proportion of alkaline matter is larger.

Nicol, in his Manual of Mineralogy, published during the present year, describes nuttallite as a distinct species. A recent analysis made in the laboratory of Prof. B. Silliman, Jr., confirms the statement made in my report, of its identity with scapolite. The composition of a specimen from Bolton, Mass., as thus determined, is as follows:

Silica, - - - - - - - -	45·79
Alumina, - - - - - - - -	30·11
Peroxide of iron, - - - - - - -	1·86
Lime, - - - - - - - - -	17·40
Potash, - - - - - - - -	3·49
Soda, Manganese, - - - - - - -	trace.
Water, - - - - - - - -	1·63
	100·28

(*Silliman's Journal*, *Nov.*, 1849, *p.* 394.)

FELDSPAR.

(Mineralogy of New-York, page 334.)

The recent researches of Erdmann, in regard to this mineral, deserve to be noticed. The following abstract is given by Berzelius, in his Annual Report for 1847. He makes four different species of feldspar, which are easily distinguished from each other:

1. *Orthoclase*, (feldspar, with a base of potash.) Sp. gr. from 2·50 to 2·60. Before the blowpipe it melts with more or less difficulty, and yields a bubly or tuberculous pearl.

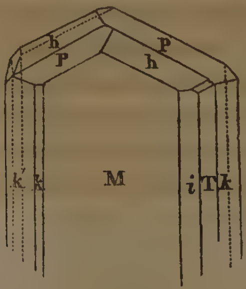
2. *Albite*, (feldspar, with a base of soda.) Sp. gr. 2·59 to 2·65. Before the blowpipe it melts more easily the the preceding, and gives a bubly, semitransparent pearl.

3. *Oligoclase*, (natron spodumen.) Sp. gr. 2·61 to 2·69, and rarely 2·70. One of the faces of cleavage presents very fine striæ. It melts easily, and gives a pearl free from bubbles, sometimes transparent, sometimes opaline, and sometimes like enamel. These differences seem to be due to the proportions of lime which they contain.

None of the three above described, are sensibly acted on by muriatic acid.

4. *Labradorite*. This sometimes presents a striated surface, like the preceding. Sp. gr. from 2·67 to 2·73. It melts more easily than oligoclase, and gives rise to a transparent or opaline pearl; but its most distinctive character is its solubility, when pulverized, in muriatic acid.

Mr. Alger, in the supplement to his edition of Phillips' Mineralogy, (page 420) gives a figure of a twin crystal of feldspar from Hammond, St. Lawrence county. It has smooth planes, is very perfect, and is one of the simplest of the twin forms.



To the locality of crystallized albite, noticed in my Mineralogy, I must now add the hemitropic form found by Dr. Emmons in the Coal Hill mine, St. Lawrence county. *Rep. on the Geol. 2d Dist., p.* 366.

STELLITE.

(Mineralogy of New-York, page 342.)

The mineral from the trap region of Bergen, in New-Jersey, and Piermont, in Rockland county, New-York; which I supposed to be the stellite of Dr. Thomson, has been the subject of some discussion.

It is stated by Dana, (Mineralogy, 2d ed.) that Mr. A. A. Hayes has analyzed the same mineral with quite a different result, as follows: Silica, 55·96; lime, 35·12; soda, 6·75; potash, 0·60; alumina and magnesia, 0·08; protoxide of manganese, 0·64; water, (hygrometric) 0·16;=99·31. Dana adds that the large per centage of soda, and the proportion of silica and lime, would seem to ally the species to *pectolite;* from which, however, it appears to be removed, by containing no water. He has compared specimens of the stellite from Bergen, with the foreign pectolite, and finds them closely similar in external characters; moreover, Frankenheim makes pectolite an anhydrous mineral, stating that the water varies, and is not an essentianl ingredient.

Mr. Alger, in the supplement to his edition of Phillips' Mineralogy, (p. 624) quotes the same analysis of Hayes, and adverts to the very close resemblance in composition and general physical characters, between this mineral and three others: the wollastonite and stellite of Thomson, and the pectolite of Von Kobell, excepting in its entire freedom from water, and its more perfect crystallization. "They undoubtedly all constitute but one species, and while they may be most appropriately designated under the name of stellite, the chemical title of *anhydrous lime* (*mesolite*) is naturally suggested by their crystallographical identity with mesolite, as established by Mr. Teschemacher."

In the number of Silliman's Journal for July, 1849, is a short notice of pectolite and stellite, by Mr. J. D. Whitney. "Pectolite occurs in Isle Royale, Lake Superior, in spheroidal masses, consisting of delicate silky fibres radiating from a centre resembling foreign specimens from Monte Baldo. The stellite of Bergen Hill, New-Jersey, analyzed by Beck, has the external characters of pectolite; and also, as Whitney shows, its composition. The following are the results of four analyses:"

	Isle Royale.		Stellite from Bergen Hill.	
	I.	II.	III.	IV.
Silica,	53·45	55·66	54·00	55·00
Lime,	31·21	32·86	32·10	32·53
Soda,	7·37	7·31	8·89	9·72
Potash,	trace.	.....	trace.	.....
Alumina,	4·94	1·45	1·90	1·10
Water,	2·72	2·72	2·96	2·75
	99·69	100·00	99·85	101·10

The stellite of Thomson, Mr. Whitney observes, was probably impure pectolite, and he refers Thomson's wollastonite to the same species.

The above analyses do not differ much from mine, of the Bergen Hill mineral, except in the presence of soda, which I still think may, in some specimens, be replaced by magnesia. They confirm the results of Von Kobell, and of my own analysis, in regard to the presence of water.

PHAKOLITE.

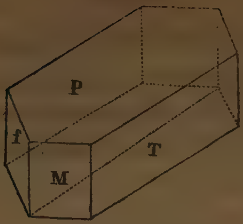
This mineral, which has been usually considered as a variety of chabazite, has been found by Mr. Alger, among specimens of minerals from New-York Island. The crystals are very perfect double six-sided pyramids, implanted on carbonate of lime. They have a wax yellow color, a waxy lustre, and are transparent. They show the incipient modifications, from the primary rhombohedron, to the six-sided pyramid. *Memoirs of the Boston Nat. Hist. Soc.*, ii., p. 86.

It may be remarked that phakolite, although it has a primary form differing only a few minutes in its angles, compared with that of chabazite, is somewhat unlike in its chemical composition. Breithaupt supposes it to be a distinct species; while Rammelsberg, from his own analysis, is disposed to regard it as a mixture of acadiolite and scolesite, with an additional atom of water.

HEULANDITE.

(Mineralogy of New-York page 346.)

Well defined crystals of heulandite, with a form similar to fig. 335, of the Mineralogy of New-York, have been found with stilbite, in the fissures of gneiss, in 23d street, New-York.



The following are the results of an analysis of this mineral by M. Damour: Silica, 59·64; alumina, 16·33; lime, 7·44; soda, 1·16; potash, 0·74; water, 14·33. This composition indicates that heulandite should be ranked with the zeolites. *Philosophical Mag. and Ann.*, xxix., p. 556.

It seems to be now settled, that the *Lincolnite* of Prof. Hitchcock, (*Final Report on the Geological Survey of Massachusetts*, *p.* 662,) is identical with heulandite. Crystals, exactly like those described by Hitchcock, have beed found in gneiss on New-York Island. *Alger, in Sill. Jour.*, xlvi., p. 235.

PREHNITE.

(Mineralogy of New-York, page 349.)

Since the publication of the Mineralogy, this mineral has been found in the fissures of gneiss in 23d street, New-York. Dr. Emmons also reports localities near Adirondack, and in Keene, Essex county. *Rep. on the Geol. 2d Dist. p*, 31.

LAUMONITE.

(Mineralogy of New-York, page 351.)

It is well known that this mineral when exposed to the atmosphere, soon loses its transparency and becomes so soft as to yield to the finger nail. According to M. M. Malaguti and Durocher, this efflorescence is owing to the loss of a small quantity of water. Specimens of it did not suffer the least alteration when kept for several months in a moist atmosphere. Crystals of laumonite altered, recovered their original transparency and appearance by being immersed in water, and these same crystals, after drying and exposure to dry air, behaved like crystals recently taken from their locality. *Phil. Mag. and Ann.* xxix, p. 555.

Dana states that the rapid decomposition to which this mineral is liable may be prevented by dipping the specimen in a thin solution of gum arabic, by means of which it is preserved from contact with the air. *Mineralogy, 2d ed., p.* 326.

CHABAZITE.

(Mineralogy of New-York, page 353.)

This mineral has been found associated with mezotype, in fissures in the gneiss, 23d street, N. Y. At Harlem it also occurs in yellow or brownish crystals with stilbite and heulandite.

EPIDOTE.

(Mineralogy of New-York, page 354.)

To the particular localities heretofore given, I have to add the occurrence of fine, though small crystals, in the gneiss near the old penitentiary, in 23d street, New-York.

TOURMALINE.

(Mineralogy of New-York, page 356.)

Crystals with very short prisms, generally resembling fig. 360 of the Mineralogy of New-York, but variously modified, have been found in the white limestone, near Amity, in Orange county.

Green and brown crystals of tourmaline are credited to Chester, in Warren county. *Rep. on the Geol. 2d Dist. p.* 64.

BUCHOLZITE.

(Mineralogy of New-York, page 364.)

In my remarks upon this mineral I stated, that its identity with sillimanite, which was urged by some mineralogists, was inconsistent with the difference in chemical composition. This arose chiefly from the fact that Muir, under the direction of Dr, T. Thomson, found sillimanite to contain a large per centage of zirconia. But the early analysis of Bowen and the more recent ones of Prof. Connell, Prof. Norton and Erdmann, failed to detect the presence of this earth. The composition of a specimen of sillimanite from Chester, Penn., as given by Erdmann, is, silica, 40·08; alumina, 58·88; protoxide of manganese, 0·74. which approaches to that of andalusite and gives the same formula.

According to a more recent notice of Dr. T. Thomson, sillimanite and fibrolite are identical with bucholzite. The species should be distinguished by the name of *silicate of alumina*. (*Phil. Mag. and Ann.*, xxvi, p. 536.) Rammelsberg has also shown the identity of bucholzite with xenolite of Nordenskiöld.

Finally, to complete the catalogue of identical minerals, M. Staff states that his analysis of a specimen of sillimanite from Chester, Conn., gives the formula of kyanite, which again is supposed to be identical with the disthene of Haüy. The recent analyses of Prof. B. Silliman, Jun., also show the identity of sillimanite, bucholzite and fibrolite, with kyanite. *Sill. Jour.*, *Nov.* 1849.

If these views are correct, the following minerals should be reduced to one species, viz:

BUCHOLZITE,	ANDALUSITE,
SILLIMANITE,	KYANITE,
XENOLITE,	DISTHENE.
FIBROLITE,	

Sillimanite has been found in the town of Yorktown, Westchester county, about ten miles north-east of Sing Sing, near the road leading from Pine's bridge to Yorktown post office, associated with monazite, tremolite and magnetic iron. The crystals are distinct and run through the iron ore; they are often 6 or more inches in length, much bent and fractured, as they are at Norwich and Chester, Conn. (*Sill. Jour.* xlvi, p. 207.) I have received specimens from my friend, Mr. Cyrus P, Fountain, of Peekskill.

According to the analysis of Prof. Norton, of Yale College, the Yorktown sillimanite contains,

Silica, - - - - - - -	37·70
Alumina, - - - - - - -	62·75
Oxide of iron, - - - - - - -	2·29
	102·74

(*Dana's Mineralogy*, *2d ed.*, *p.* 378.)

PITCHSTONE.

(Mineralogy of New-York, page 367.)

This is perhaps the most appropriate place for the introduction of a notice of a mineral found by Dr. Emmons at Johnsburg, in Warren county. It is called *obsidian*, and is described as occurring in a trap dyke at the line of contact of the gneiss, in which it is embraced. The mineral has a bluish black color, a vitreous lustre and a conchoidal fracture. It is only about an inch wide on both sides of the dyke. Dr. Emmons says, " it is to be considered as a part of the dyke, which for some cause was more perfectly pure, and in consequence of more suddencooling from contact with the rock, assumed the more vitreous form of obsidian." *Rep. on the Geol., 2d Dist., p.* 184.

An analysis of a specimen of this substance gave, silica, 55·50; oxide of iron, 32·00; lime, with a minute portion of alumina, 6·90; magnesia, 4·62. If this is a correct view of its composition, it differs considerably from the varieties of obsidian heretofore examined. But I apprehend that its chemical character will be found liable to great variations.

PYROPHYLLITE.

(Mineralogy of New-York, page 368.)

Well characterized specimens of this curious mineral have been found in Phillipstown, Putnam county. It is supposed to be a mechanical mixture, consisting of greyish green foliated scales, looking like talc or mica in a greyish white, mealy base. It is, however, very distinct in composition. Mr. J. E. Teschemacher thinks it identical with vermiculite. *Proceed. Bost. Nat. Hist. Soc'y*, 1843.

MICA.

(Mineralogy of New-York, page 369.)

This mineral is exceedingly abundant, and fine specimens have been found in various parts of New-York, many of them of great beauty. Attempts have been made to arrange the multiplied varieties under classes or groups, but these have not been entirely successful. They differ principally in their optical characters, but the difficulty which attends their division founded on these is, that the chemical composition does not always accord with them.

Since the publication of my Mineralogy, I have examined several of the New-York specimens and introduce the following notices, which, although incomplete, may be of some use to those who shall hereafter be induced to take up the investigation.

MARGARITE.

Some of the specimens from Orange county, often ticketed talc, belong to this species. The mineral has a vitreous lustre, a pale, pearly gray color, rather brittle, translucent to subtranslucent. It is associated with chondrodite and pseudomorphs of hornblende. It exhibits only one axis of double refraction and fuses *per se* into a white enamel. Similar specimens occur in the town of Rossie, St. Lawrence county. I have not analyzed these specimens.

The micas with a single axis, so far as I have examined them, are usually more easily fusible than those with a double axis. In thin fragments they curl up under the blowpipe and fuse into a vermicular enamel, varying in color with the specimen. The following belong to,

HEXAGONAL OR MONOAXIAL MICA.

Forshees mine, Orange county. Optic axis single; rather difficultly fusible.

Copper colored mica, from Edenville, Orange county. Optic axis single; fuses into a dark enamel.

Silvery mica, from Rossie, St. Lawrence. Optic axis single; fuses into a white string.

Mica, from Vrooman lake, Jefferson county. Optic axis single.

Mica, from Governeur, St. Lawrence county. Optic axis, single. In thin plates it fuses into a string of a white color and high lustre.

Copper colored mica, from Edwards, St. Lawrence county. Crystalized in six-sided tables, sometimes 5 or 6 inches in diameter; optic axis single; fuses with difficulty into a white mass; angles of the crystals about 120°; lustre metallic; plates sometimes curved.

Silvery mica, from Edwards. Crystallized in six-sided tables; optic axis single; fuses rather more easily than the preceding.

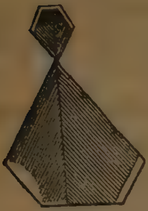
The brown mica, from Jefferson county, New-York, has been analyzed by Meitzendorff, whose average results are thus stated by Berzelius, (*Arsb.* 1843, *p.* 211,) silica, 41·30; alumina, 15·25; peroxide of iron, 1·77; magnesia, 28·79; potash, 9·70; soda, 0·65; fluoric acid, 3·30; loss by ignition, 0·28. It thus agrees very nearly with Prof. H. Rose's analysis of magnesian mica from Siberia. *Alger's Phillips*, 619.

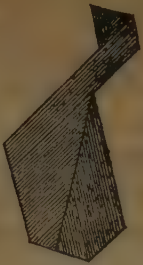
ORDER III. GLUCINA.

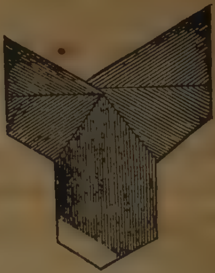
CHRYSOBERYL.

(**Mineralogy of New-York, page 375.**)

To the extensive series of compound crystals figured in the Mineralogy of New-York, I have to add a few others. For the ability to do this, I am indebted to Dr. Leonard, of Lansingburgh, N. Y., who has been uncommonly successful in his exploration of the Greenfield locality. He has obtained from thence specimens of extraordinary size and beauty. Many of them exhibit the forms which I have heretofore figured; but those which are here introduced are worthy of notice. They are of the actual size, and from one-third to one-half an inch in thickness.







Dr. Leonard informs me that next to the six hemitropes, the most common combination is that of two united by their apexes.

Specimens of columbite have been found by Dr. Leonard, associated with chrysoberyl, at the Greenfield locality.

Descloizeaux has published under the crystalline forms of cymophane, a detailed description, with plates, and M. Biot has made some experiments upon the structure of this mineral in regard to polarized light. *Ann de Chim, et de Phys.* xiii, 329, 335.

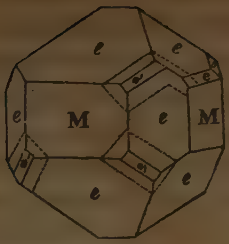
ORDER IV. ZIRCONIA.

ZIRCONITE.

(Mineralogy of New-York, page 378.)

This mineral has been found in New Sweden, Essex county, (*Emmons Rep. Geol., 2d Dist., p.* 286;) in Putnam Valley, Putnam county, (*Fountain;*) and on the farm of Mr. Cleaveland in Diana, Lewis county. At the latter locality it occurs rarely, but the crystals, although small, are very billiant. *F. B. Hough, who quotes Mr. Wilder, Sill. Jour., Jan.*, 1848.

I have also received specimens from Mr. Charles Thomas, which were obtained from a mine of magnetic iron ore, near Port Henry, Essex county. In form and color the crystals resemble those from the Hall mine in the same county.



According to Mr. Dana, the crystals from Johnsburg, in Warren county, sometimes have a tesselated structure. The accompanying figure represents the appearance of one of the crystals. *Sill. Jour.*, xlvi., p. 36.

METALLIC MINERALS.

NATIVE IRON.

(Mineralogy of New-York, page 382.)

Since the publication of my Mineralogy, several interesting facts in regard to the ocurrence of native iron in this State have been made known.

Dr. Emmons has described a specimen which he calls native iron, said to have been obtained from the vicinity of Catskill, in Greene county. It is in the form of laminæ, which are about one-thirtieth of an inch in thickness. Sp. gr. 6·58. It dissolves completely in warm sulphuric or muriatic acid, and when nitric acid is added, ammonia precipitates the peroxide of iron. It is strongly attracted by the magnet. The laminæ are only slightly flexible, but are entirely destitute of malleability. *Amer. Quart. Jour. of Science*, ii., p. 367.

B. Silliman, Jr., describes a mass of meteoric iron found a short distance below the surface of the earth in Cambria, near Lockport, Niagara county. On analysis it was found to contain iron 94·22; nickel 6·35. *Sill. Jour.*, xlviii., p. 388.

For a notice and analysis of a mass of meteoric iron found in the town of Burlington, Otsego county, see *Sill. Jour.*, xlvi., p. 401.

MAGNETIC IRON ORE.

(Mineralogy of New-York, page 383.)

Crystals of this mineral have been found in a mine near Port Henry, in Essex county. They are regular octahedrons from ½ to ¾ of an inch in diameter, and are strongly magnetic. For these interesting specimens I am indebted to Mr. Charles Thomas.

Prof. Adams, in his report on the Geology of Vermont, (1846,) describes crystals of magnetic iron as occurring in granular specular iron. In some cases they are partly, and in others wholly, converted into peroxide of iron. They are found in Chittenden, adjoining Lake Champlain.

Several new localities of common magnetic iron have been discovered since the publication of my Mineralogy, especially in the northern parts of the State. I will only particularize its occurrence in beds in the gneiss rock of Greig, Lewis county. It is supposed to exist in some quantity, but it is associated with iron pyrites, and requires to be purified by the magnet. This is said to be the only known locality of magnetic iron ore on the western side of the great northern forest of New-York. *F. B. Hough, Sill. Jour., Jan.*, 1848.

The sanguine anticipations which were at one time entertained in regard to the conversion of the magnetic iron ore into steel by a direct process, have not been realized. This is no matter of surprise to those who had carefully studied the nature of steel and the peculiarities of structure to which it owes its value. None but the most visionary persons would have sanctioned expenditures based upon such erroneous views.

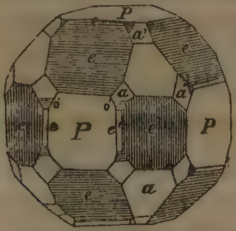
I may add here the composition of the cast and forged iron from the ore of the Long mine, in Orange county. The cast iron contains carbon 2·390; silicium 1·904; phosphorus 0·027; sulphur 0·004; iron 95·603.

The forged iron contains, silicic acid 0·532; phosphorus 0·023; sulphur 0·001; iron, carbon and loss 94·443. The cast iron contains traces of cobalt and nickel. *Berzelius' Annual Report*, 1847.

IRON PYRITES.

(Mineralogy of New-York, page 287.)

To the interesting crystalline forms of this mineral, figured in my Mineralogy, I may add that here introduced, which has been figured by



Mr. Dana from a crystal from Rossie, St. Lawrence county, in the possession of Dr. Emmons. *Sill. Jour.*, xlvi., p. 36.

CACOXENITE.

(Mineralogy of New-York, page 402.)

This mineral is liable to decomposition, even in the closed drawers of a cabinet. My specimens from the Sterling iron mine in Jefferson county, at the end of 2 or 3 years entirely lost their silky lustre, and were converted into a dull yellowish powder.

BABINGTONITE.

(Mineralogy of New-York, page 407.)

The composition of this mineral as determined by Dr. R. D. Thomson is as follows: silica 47·46; protoxide of iron 16·81; protoxide of manganese 10·16; alumina 6·48; lime 14·74; magnesia 2·21; water 1·24. This analysis approaches one by Bonsdorff of a black hornblende from Nordmark and Pargas, the magnesia being replaced by manganese in Babingtonite. *Phil. Mag. & Ann.*, xxvii., 123.

ZINC BLENDE.

(Mineralogy of New-York, page 408.)

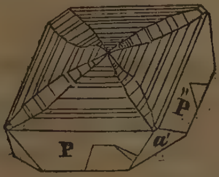
The occurrence of this species in the calciferous sandrock, one or two miles N. E. of Glen's Falls, in Warren county, is mentioned by Dr. Emmons. *Rep. on Geol., 2d Dist., p.* 180.

GALENA.

(Mineralogy of New-York, page 412.)

Various crystalline forms of galena occurring at the Nash vein in St. Lawrence county, are noticed by Dr. Emmons. *Rep., on Geol., 2d Dist., p.* 356.

For some remarks of the singular crystals of this mineral found at Rossie, St. Lawrence county, by Mr. J. E. Teschemacher, see *Phil Mag. & Ann.*, xxv., p. 232.



The crystals of galena from Rossie are sometimes very singularly constituted. Alger introduces a figure representing a crystal of the natural size in his possession. It is a flattened cube. The lateral planes P P″, as well as the replacements of the lower solid angles á, are extremely brilliant and regular; but the upper solid angles and the terminal edges, are replaced by planes, which successively rise, in a step-like manner to the apex, forming a low pyramid. See his explanation of the mode of formation, *Phillips' Mineralogy, Suppl.*, p. 623.

WHITE LEAD ORE.

(Mineralogy of New-York, page 414.)

Small crystals of carbonate of lead, an eighth of an inch or less in length, are occasionally found sprinkled thickly over the surface of the galena of Rossie, which when this is the case is deeply roughened or corroded. The crystals are striated prisms, terminating in four brilliant planes, two of which meet at an angle of 117° nearly, and the other two at an angle of 88°. The crystalline form, as well as the blowpipe characters prove that the mineral is carbonate of lead. *Dr. G. Hadley, in Sill. Jour., Jan.*, 1847.

NATIVE COPPER.

(Mineralogy of New-York, page 420.)

Prof. Dewey states that he has found some speculæ of native copper in the pentamerus limestone, (probably near Rochester, Monroe county.) Pyritous copper and green carbonate of copper occur in the same mass. *Hall's Rep. on Geol., 4th Dist.*, p. 67.

This mineral is also occasionally found in the Taconic slate. *Emmons' Rep. on Geol., 2d Dist.*, p. 158.

RUTILE.

(Mineralogy of New-York, page 428.)

According to Damour, this mineral is identical in composition with anatase. *Phil. Mag. & Ann.*, xxiv., p. 477.

SPHENE.

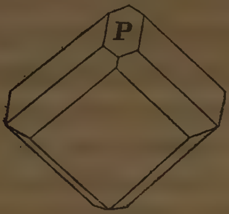
(Mineralogy of New-York, page 433.)

A brown mineral resembling sphene, but supposed to be different, is said to have been found in Rossie, St. Lawrence county. *Emmons' Rep. on Geol., 2d Dist.*, p. 366.

Sphene has been found in Putnam Valley, Putnam county, by Mr. Cyrus P. Fountain.

Rose's analysis of the sphene of Zillerthal gave the following results: silica 32·29; titanic acid 41·58; oxide of iron 1·07; lime 29·60. The analysis was effected by sulphuric acid, and the details are given in the *Phil. Mag. & Ann.* xxvii. p. 560.

A new process for the analysis of this mineral, invented by Fuchs, is described in *Berzelius' Annual Rep. for* 1845, *p.* 178.



The *Lederite* of Shepard, it now appears, is identical with common sphene in its crystallographic and other characters. The accompanying figure illustrates its crystallization.

ADDITIONS

Of Mineral Species found in this State since the date of the publication of the Mineralogy of New-York.

COLUMBITE.

This mineral has been found by Dr. Leonard, associated with chrysoberyl at the remarkable locality in the town of Greenfield, Saratoga county.

LOXOCLASE.

This name has been applied by Breithaupt to a mineral received from Prof. Shepard. It was found in Hammond, St. Lawrence county, with pyroxene, graphite and calcareous spar. In many respects it resembles oligoclase (soda spodumene;) color yellowish-gray, yellowish-white, pea yellow and blueish gray. Lustre between vitreous and greasy; pearly on the most perfect cleavage surface. Primary form an oblique rhombic prism. P. on M. 93° 45′, P. on T. 115° 30′.

Cleavage perfect, very distinct in the direction of the short diagonal; indistinct approaching distinctness in the direction of the long diagonal; hemiprismatic in fragments. Fracture uneven to conchoidal and hackly. Hardness 6. Specific gravity=2·609 to 2·620. Translucent in thin laminæ to transparent.

The oblique cleavage in the direction of the long diagonal is characteristic of loxoclase, although not always very distinct; hence its name. The sp. gr. is also higher than any other of the orthoclastic feldspars. It appears subject to decay by exposure to the atmosphere.

Composition. (Mean of two analyses,) silica 63·50; alumina 20·29; oxide of iron 0·67; potash 3·03; soda 8·76; lime 3·22; water and fluoride of silicon 1·23. Fuses before the blowpipe with difficulty. Heated in a glass bulb it gives out a little water and fluoride of silicon, and is very imperfectly decomposed by hot muriatic acid. *Poggendorff's Annalen; Phil. Mag. & Ann.*, xxix., *p.* 150, *Aug.*, 1846.

MONAZITE.

This mineral, associated with sillimanite, as at Chester, Norwich and Saybrook, Conn., has been found in a quarry in Yorktown, Westchester county, by Mr. J. Mekeel. The monazite is in very perfect, transparent prisms, with a simple pyramidal termination; the crystals are small, rarely exceeding one-eighth of an inch in length, and are scattered like small garnets through the brown quartz adjoining the magnetic iron ore which is an associate of this mineral. *Sill. Jour.* xlvi, p. 207.

NITRATE OF LIME.

This is said to be found in Marbletown, Ulster county, and near West Point, Orange county. *Mather's Rep. on the Geol. 1st Dist.*, p. 85.

PHYLLITE.

This is a mineral which was first found by Vanuxem, in the town of Newport, Rhode Island. It is in the form of black shining scales, in slate. I have found the same near the Clove iron mine, in Dutchess county.

Composition. According to Dr. T. Thomson, the constituents of phyllite are as follows: silica, 38·40; alumina, 23·68; peroxide of iron, 17·52; magnesia, 8·96; potash, 6·80; water, 4·80.

It is thought to be identical with the ottrelite of Descloizeaux and Damour; but Thomson's name has the priority.

YTTRO-CERITE.

The occurence of this very rare mineral in the limestone of Orange county, N. Y., was first noticed by Mr. Alger.

It presents all the characters of the mineral from Finbo, in Sweden, and cannot be distinguished from it in hand specimens. (*Memoirs of the Boston Nat. Hist. Soc.* ii, p. 88.) It occurs in grains of a beautiful purple color, resembling fluor spar for which it has heretofore passed among the New-York mineralogists. I have specimens from Amity, in Orange connty, associated with talc and other minerals in white limestone.

(I.)

References to various Essays and Writings on the Natural History of New-York, mostly published subsequent to issuing the respective volumes on that subject.

MAMMALIA.

Annals of the New-York Lyceum of Natural History, vol. 4, p. 53. Description of five species of Vespertilio, that inhabit the environs of New-York, by William Cooper:

1. Vespertilio pruinosus.
2. Vespertilio noveboracensis.
3. Vespertilio noctivagans.
4. Vespertilio carolinesis.
5. Vespertilio subulatus.

All of these are recognized by Dr. DeKay.

BIRDS.

Annals of New-York Lyceum, vol. 4, p. 51. Notice of the appearance of the Pine Groesbeak, (*Pyrrhula enucleator*,) in the vicinity of New-York. By James F. Ward.

Annals of New-York Lyceum, vol. 4, p. 171. Description of a new species of Anser, by George N. Lawrence. Read March 18, 1846. Anser nigricans, (*Black-bellied Goose.*)

Sir Charles Lyell's Second Visit to the United States, vol. 2, p. 247, American edition. "In Wilson's Ornithology it is stated that the Hummingbird migrates from the south to Pennsylvania, the latter part of April and builds its nest there about the middle of May. For the last thirty years Mr. McIlvaine has never been disappointed in seeing it reach Burlington, in New Jersey, on the banks of Delaware, the first week of that month, generally about the middle of the week; its northward progress being apparently hastened or retarded by the mildness of the season. They seem always to wait for the flowering of a species of horse-chesnut, called here, the Buckeye, from the fancied likeness of its fruit to the eyes of a deer. The bright red blossoms of this tree supply the nourishment most attractive to these birds, whose arrival had been looked for the very day after I came. Strange to say, one of them, the avant-courier of the feathered host, actually appeared and next morning, (May 7, 1846,) hundreds were seen and heard, flitting and humming over our heads."

INSECTS.

Annals of the Lyceum, &c., vol. 4, *p.* 141. Monograph of the species of Psamichus, inhabiting the United States, with descriptions of two new genera belonging to the family Carabica. By John L. LeConte. Read November 9, 1845.

Annals of the Lyceum, &c., vol. 4, *p.* 173. Descriptive catalogue of the Geodephagous coleoptera, inhabiting the United States, east of the Rocky Mountains. By John L. LeConte. Read May 25, 1846.

BOTANY.

Silliman's Journal, new series, vol. 7, *p.* 167. Notes on some Chenopodiacaœ, growing spontaneously about the city of New-York. By John Carey.

Silliman's Journal, new series, vol. 8, *p.* 347. Observations on American species of the genus Potamogeton, by Edward Tuckerman, A. M.

MINERALOGY.

Annals of the New-York Lyceum, vol. 4, *p.* 76. Description of the Vauquelinite, a rare ore of Chromium, in the United States. By John Torrey, M. D.. Read April 27, 1835.

(Noticed by Dr. L. C. Beck, in his Mineralogy of New-York.)

Proceedings of the Academy of Natural Sciences of Philadelphia, vol 4, *p.* 6. Mr. Ashmead on Calcareous Spar from the Rossie lead mines, in New-York.

Boston Medical and Surgical Journal, vol. 40, *p.* 283. Dr. Samuel P. White, on the Acid springs, at Alabama, Genesee county.

Silliman's Journal, new series, vol. 8, *p.* 385. Professor Benj. Silliman, Jr., analysis of Munrolite, occurring at Munroe, Orange county.

GEOLOGY AND PALÆONTOLOGY.

Silliman's Journal, new series, vol. 7, *pages* 45, 218. Parallelism of the Palæozoic formations of North America with those of Europe. By Ed. DeVerneuil, and translated by James Hall.

Silliman's Journal, N. S., vol. 7, p. 175. On the Acid Springs and gypsum deposits of the Onondaga salt group. By T. S. Hunt, of the Geological Survey of Canada.

Proceedings of the American Association for the Advancement of Science, 1st meeting, September, 1848, *p.* 135. Account of a remarkable geological development in Elizabethtown, Essex county.

Quarterly Journal of the Geological Society of London, vol. 2, *p.* 20. Observations on the Caryocrinites of Mr. James Hall.

Quarterly Journal of the Geological Society of London, vol. 4, *p.* 66. On Trematis, a new genus, belonging to the family of the Brachiopodous mollusca. By Daniel Sharpe, F. G. S. (The Orbicula terminalis of Emmons and Hall is here called Trematis terminalis.)

Quarterly Journal of the Geological Society of London, vol. 4, *p.* 146. Remarks on the Palæozoic formations of the United States, contained in the collection of Charles Lyell, Esq., with remarks on the comparison of the North American formations with those of Europe. By Daniel Sharpe, F. G. S.

Quarterly Journal of the Geological Society of London, vol. 5, *p.* 107. On the supposed impressions in shale of the soft parts of an Orthoceras By James Hall, foreign member of the Geological Society, State Geologist of New-York.

The first discovery (probably) of fossil bones and teeth in the State of New-York.

(From Weld's history of the Royal Society, vol. 1, p. 421.)

In 1713, in answer to "instructions to Ministers and Governors proceeding abroad," and which had been directed by the Queen to be prepared, Lord Cornbury made the following communication. It is dated from New-York and addressed to the secretary.

"I did by the Virginia fleet, send you a tooth, which on the outside of the box, was called the tooth of a giant, and I desired it might be given to Gresham College. I now send you some of his bones, and I am able to give you this account. The tooth I sent was found near the side of Hudson's river, rolled down from a high bank, by a Dutch country fellow, about twenty miles on the side of Albany, and sold to one Van Bruggen for a gill of rum. Van Bruggen, being a member of the Assembly, and coming down to New-York to the Assembly, brought the tooth with him and shewed it to several persons here. I was told of it, and sent for it to see, and asked if he would dispose of it; he said it was worth nothing, but if I had a mind to it, 'twas at my service. Thus I came by it. Some said 'twas the tooth of a human creature; others, of some beast or fish, but nobody could tell what beast or fish had such a tooth. I was of opinion that it was the tooth of a giant, which gave me the curiosity to enquire farther. One Mr. Abeel, Recorder of Albany, was then in town, so I directed him to send some person to dig near the place where the tooth was found; which he did, and that you may see the account he gives me of it, I send you the original letter he sent me; you must allow for the bad English. I desire these bones may be sent to the tooth, if you think fit. When I go up to Albany next, I intend to go to the place myself, to see if I can discover any thing more concerning the monstrous creature, for so I think I may call it."

Mr. Abeel's letter runs thus:

"According to your Excellency's order, I sent to Klaverak to make further discovery about the bones of that creature, where the great tooth of it was found. They have dug on the top of the bank, where the tooth was rolled down from, and they found, fifteen feet under ground, the bones of a corpse that was thirty feet long, but was almost all decayed; so soon as they handled them, they broke in pieces; they took up some of the firm pieces and sent them to me, and I have ordered them to be delivered to your Excellency."

(K.)

INDEX TO THE VOLUMES

IN THE

State Cabinet of Natural History,

CONTAINING THE

PLANTS OF THE STATE OF NEW-YORK.

☞ A reference to Prof. TORREY's Catalogue of the Plants, of which specimens are preserved in the State Cabinet at Albany, (published in the Annual Report of the Regents of the University, on the condition of the State Cabinet, for the year 1849,) will indicate the individual species of the genera contained in each volume. The Orders and Genera are numbered according to Prof. TORREY's Flora of the State of New-York.

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Pl. 1.

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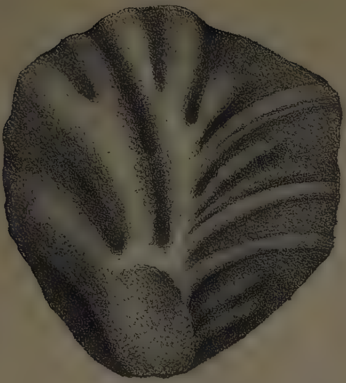

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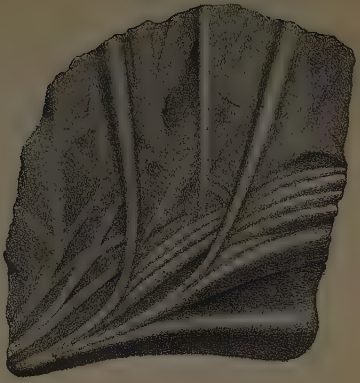

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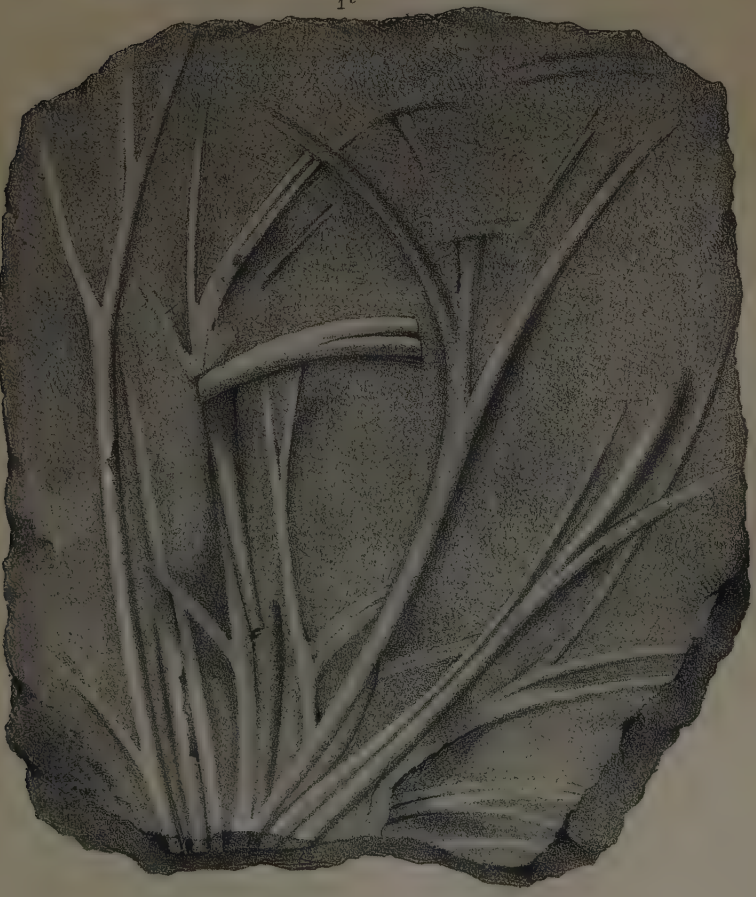

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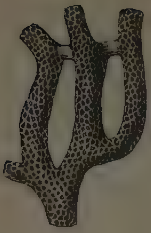

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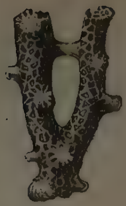

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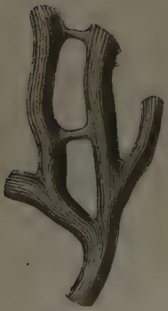

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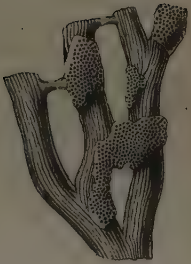

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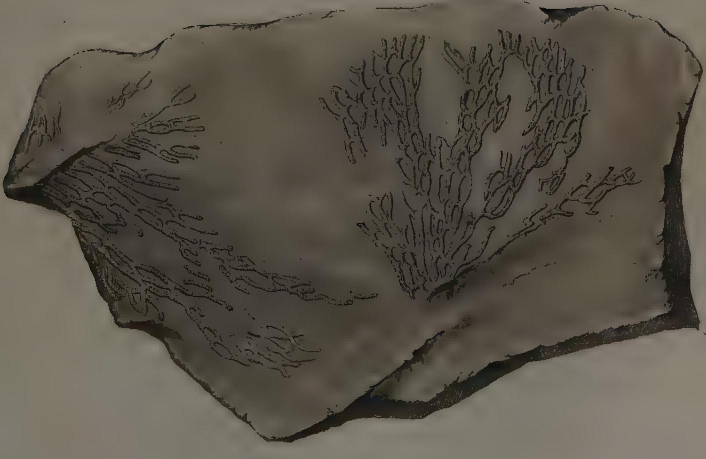

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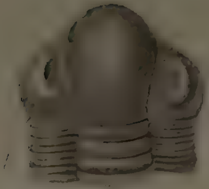

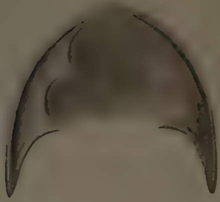

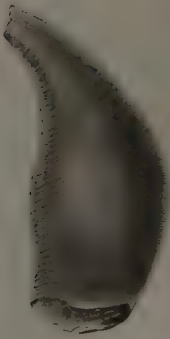

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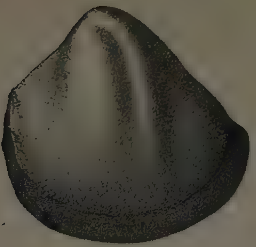

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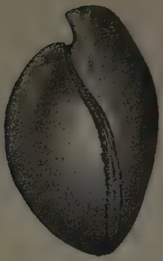

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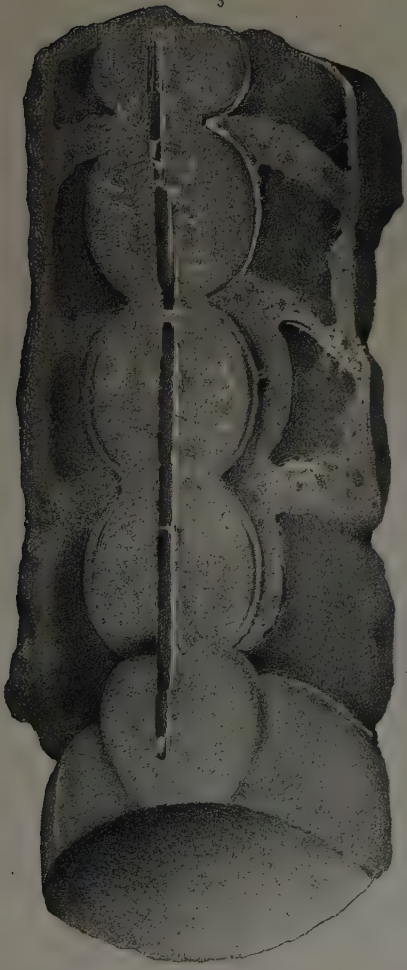

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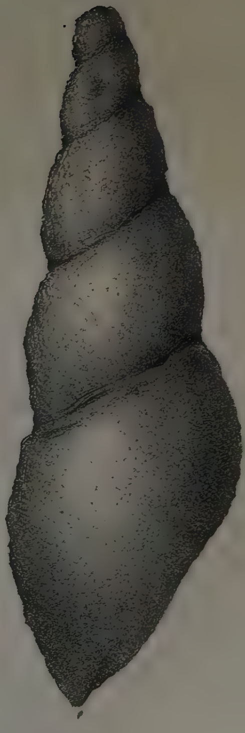

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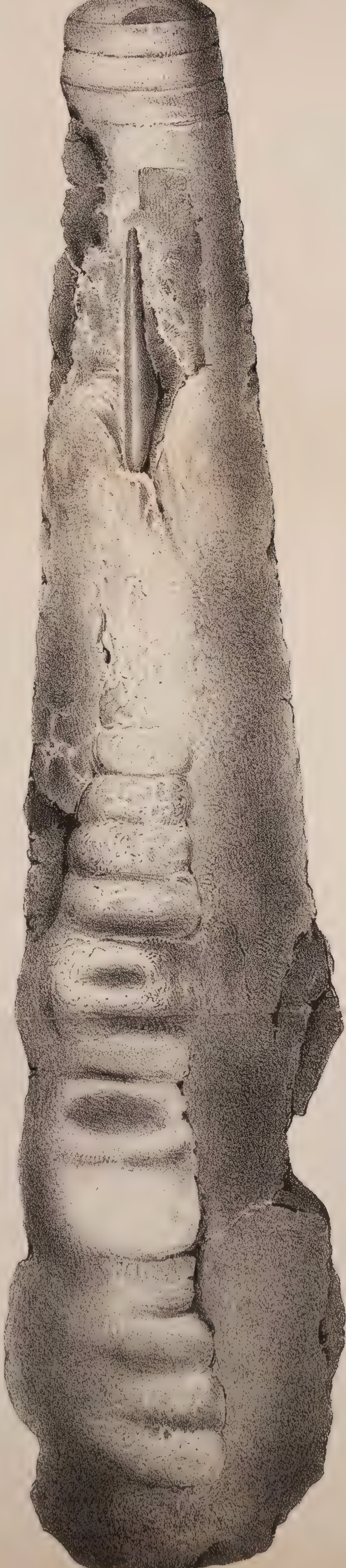

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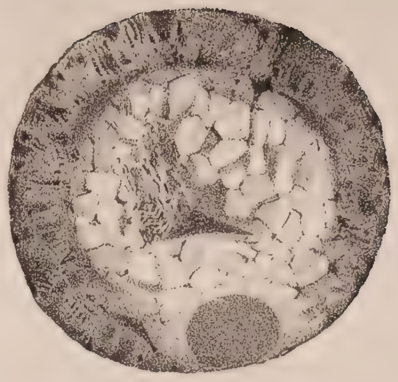

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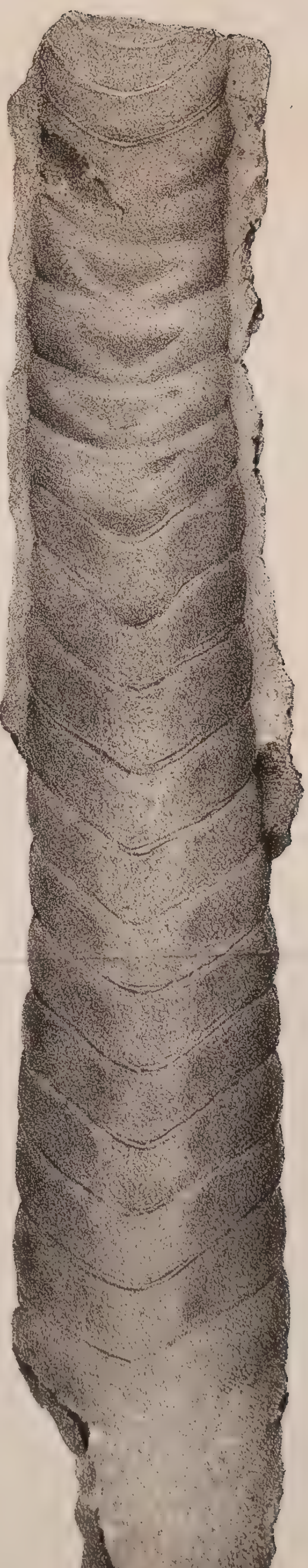

(K.)

DESCRIPTION OF NEW SPECIES OF FOSSILS,

And Observations upon some other Species previously not well known,

FROM THE TRENTON LIMESTONE.

BY JAMES HALL.

The following described fossils have been obtained from the Trenton limestone since the publication of the first volume on the Palæontology of New-York. Several of these are entirely new, and interesting as adding to our knowledge of several genera, of which few species have yet been described. These fossils were collected during a short excursion in a few localities not thoroughly examined, and from these we may infer that a large number yet remain undescribed in the lower silurian rocks. In these descriptions I have not included several, the characters of which are somewhat equivocal, or of which we may expect to procure more perfect specimens. Several specimens, illustrating in a more perfect and satisfactory manner species already described in the volume referred to, have been added to this list, in order to give those pursuing the study of this subject the best information we possess up to this time.

In commencing a work like the Palæontology of New-York, in a country where comparatively so little had been done in collecting or investigating fossils of the older rocks, it was impossible in all cases to procure perfect specimens of the fossils described. It is expected moreover that the fossils from the older stata are less perfect and more dilapidated than those of newer formations; and the solid and sometimes altered condition of the strata often prevents the procuring of perfect specimens, which may readily be done in the more modern formations.

It would not be satisfactory to the student, nor even to the cursory examiner, to leave unfigured and undescribed, fragments or imperfect specimens of fossils, since the collection of every one, and particularly of beginners, must necessarily consist in part of such, from the difficulty and time required to obtain perfect ones. It is therefore desirable from time to time to present the additional knowledge acquired by the fortunate discovery of a fossil in natural exposures, or their constant develppment from the increased number of quarries and excavations from public improvements. In this way those species originally figured in an imperfect condition may be represented in their perfect state; and the difficulty and annoyance avoided that may arise, and has often arisen, from describing as two species parts of the same animal.

Moreover, undescribed species can be of little use to the collection of an amateur; and however many he may have thus circumstanced, he cannot use them to advantage in the ordinary mode of exchange for others, since they are not designated by name. A fossil to be valuable in the eyes of a geologist or palæontologist, must have a name and the true geological position given, or it sinks in his estimation at once to a mere object of curiosity; while otherwise, it has a place not only in its zoological relations, but also in the order of its succession, or time, doubly important to the naturalist.

Since it is quite impossible, with the limited means possessed by the palæontologist, to collect and describe every species, and since it must be expected that new species will be obtained, for the next half century, from the rocks already examined it is evident that every year will produce something to be done, to bring the subject up to the best knowledge we possess. It is equally true that whatever means are adopted, much must still remain to be discovered. Excavations for railroads, canals, and the improvement of highways, as well as the increased number of quarries opened to supply the wants of an increasing population, will constantly bring to light new fossils, as well as other objects of natural science. If every student or collector finding fossils undescribed in the State work on Palæontology, would forward them to the curator of the Geological Rooms at Albany, the annual reports of the Regents offer an opportunity for having them properly described and figured; thus permanently preserving in the State collection the originals of these fossils, while it is adding to his own knowledge of the subject and enhancing the interest and value of his collection. Many collectors, residing upon the ground, have it in their power to furnish better specimens to the State collection, than it has been in the power of the Palæontologist to do, from his limited time for examining individual localities. Such specimens greatly enhance the value of this part of the collection, and furnish facilities for further elucidation of the subject. It may be unnecessary for me to make the same appear for all the departments.

For Palæontology, however, I will make another observation. Species have heretofore been described chiefly from exterior characters, and very few collections are made with a view to the examination of the interior or more vital parts. To the palæontologist the interior of the shell is often of more real importance in his investigations than a perfect specimen; since this part may reveal to him characters more reliable and more constant than the exterior. The same is true of other fossils; whatever exhibits the internal characters and arrangement of parts is very desirable in an extensive and permanent collection, for these furnish at once points of comparison very conclusive, regarding the identity or difference of similar fossils. Every collector, therefore, should understand that those fragments showing internal structure in fossil bodies, are worthy of preservation, and even when these characters are apparently unallied to any other, they are nevertheless important in extensive comparisons. I might instance the columns of crinoidea, which occur in fragments in all our strata. These, when studied, furnish illustrations of the highest interest, and we are often able to connect with certainty the veriest fragment with the perfect form by a minute internal characteristic. Lest there be not observed in this, some important result besides the scientific value and interest, I may mention what every collector knows, that the locations of perfect specimens are few, while those of fragments and detached parts are numerous. Now it is important, upon economical considerations, to be able to recognize fossils by fragments, or from some zoological character, that in seeking for valuable beds we may know our proximity thereto, not only from the occurrence of perfect fossils, but from the fragments which are preserved in the more numerous localities.

Since New-York must always remain the classic ground for the study of the geology and palæontology of the older rocks, no other country having so perfect a development of the systems, it is important that the State collection should contain the most perfect and authentic collection of these as of the other productions of her territory. I would appeal, therefore, to the patriotism of our citizens to consider the interests and wants of this collection before they dispose of their beautiful specimens to private collections which can never be permanent.

As an encouragement to those who have already spoken to me on this subject, expressing hopes of the permanent care and preservation of this part of the collection and who have been only waiting such an arrangement to contribute specimens, I may say that the collection has recently been placed by the Regents of the University, in the charge of Mr. John Gebhard, Jr., of Schoharie, whose quiet zeal and untiring industry have almost solely contributed to bring out the rare and beautiful exhibition of fossils from the rocks surrounding his native valley. Those, therefore, who desire to contribute specimens may feel assured that in the hands of Mr Gebhard, every fossil will be fully appreciated and carefully preserved.

BUTHOTREPHIS ? CÆSPETOSA, (*n. species.*)

Plate 1, fig. 1, *a*, *b*, *c*.

Plant at base composed of numerous coalescing stems which in ascending are frequently bifurcated; branches tapering to acute points.

The mode of growth is very peculiar in this species; in all the individuals seen the base appears like a coalescing or twisted bundle of stems, which separate and expand above, frequently bifurcating in their extension. Several specimens of this species have been found in the lower part of the Trenton limestone. It is extremely different from all the other species of the genus and may perhaps be referred with almost equal propriety to the genus *Palæophycus*, though when better known it will probably be separated from both these genera.

This species has been found in the vicinity of Watertown, Jefferson county, and occurs in thin layers, exposed by the action of the water of the river, near the lower part of the formation.

RETEPORA FENESTRATA, (*n. species.*)

Plate 2, fig. 1, *a*, *b*, *c*, *d*, *e*.

Frond much expanded, loosely reticulate; branches rounded, frequently bifurcating, united laterally by transverse bars; non-poriferous surface striated; poriferous side of branches covered with numerous small angular pores, sometimes with poriferous nodes upon the poriferous side of the branches; fenestrules irregular in size and form.

This species is very peculiar in its character, appearing at first view like a reticulated coral without transverse bars. The growth and bifurcation of the branches appear to have been quite irregular and they approach each other so closely as often to appear as if coalescing. In the presence of transverse bars, which are apparently non-poriferous, uniting the branches, it differs from Retepora, to which it is closely allied in other respects. In the rounded branches and transverse non-celluliferous dissepiments it resembles Polypora, but the cells are angular as in Retepora, and the coral has the general aspect of that genus.

Fig. 1, *a*, a specimen of this coral upon the surface of a fragment of limestone. In some parts the coral appears to be distinctly reticulated, while in others the branches are united by transverse bars.

Fig. 1, *b*, a portion of the poriferous surface enlarged.

Fig. 1, *c*, another fragment, having elevated nodes upon the surface of the branches.

Fig. 1, *d*, an enlarged portion of the non-poriferous face.

Fig. 1, *e*, a similar fragment of the non-poriferous face, partially covered by an incrusting coral which has the character of Chætetes.

This species occurs in the lower part of the Trenton limestone, near Lowville, Lewis county. (*State Collection.*)

ÆGILOPS, (*new genus.*)

Inequilateral, valves, somewhat trigonal, rounded on the base, sloping abruptly from the beaks, which are incurved at the extremity.

ÆGILOPS SUBCARINATA.

Plate 4, fig. 1, *a*, *b*.

Trigonal, with the beaks much elevated and incurved; anterior slope short, ending in a slightly rounded extremity, which continues into the curve of the rounded base; posterior slope long and straight; surface marked by a rounded ridge or carina extending from the beak nearly to the base, and margined on each side by a corresponding depression.

The form of this shell is peculiar and characteristic, the inequality of the valves is only apparent or due to pressure. It is clearly the type of a genus which has not hitherto been noticed in the lower silurian rocks of this country, if in Europe.

This species was found in the Trenton limestone, near Lowville, Lewis county. (*State Collection.*)

MURCHISONIA SUBFUSIFORMIS.

Plate 4, fig. 2.

Reference.—Palæontology of New-York, vol. i, page 234, plate 39, fig. 2.

The two figures of this fossil referred to, give but a very imperfect idea of the species. Nearly all the specimens procured are so mutilated that the true form is scarcely to be determined. The specimen now figured is the most perfect one that has fallen under my observation and will serve to give a better idea of the form and proportions of the species than those heretofore given. It preserves five volutions, two volutions of the apex are broken off. The specimen is scarcely at all compressed, and it shows the peculiar form which clearly distinguishes it from *M. bellacincta.*

In the shaly portion of the Trenton limestone, near Lowville, Lewis county. (*State Collection.*)

SUBULITES ABBREVIATA, (*n. species.*)

Plate 3, fig. 2, *a*, *b*, *c*.

Short, subfusiform, last volution making nearly the whole bulk of the shell; spire rapidly diminishing; composed of about three volutions; aperture long, very narrow above; outer lip straight and parallel to the axis of the shell; margin of the shell opposite the outer lip, and with the spire above forming a regular curve from apex to base.

This species possesses the character of the genus as expressed in the *S. elongata*, but it is extremely different from that one in the short spire and curved outline of the back of the shell. The specimens are interesting as presenting a second species of a peculiar genus, and one not recognized above the lower silurian period.

The specimens figured were obtained from the semicrystalline limestone in the higher part of the Trenton limestone, near Watertown, Jefferson county. The position and associated fossils are the same as in the other species of the genus. (*State Collection.*)

ONCOCERAS CONSTRICTUM.

Plate 3, fig. 3.

Reference.—Page, 197, plate 41, figs. 6 and 7, Palæontology of New-York, vol. 1.

This species was described from fragments and the characters were not completely defined. The specimen figured is almost entirely perfect, showing the contracted, nearly circular aperture, and the swelling above, which presents a transversely oval section, suddenly tapering from thence towards the apex, which is curved from the commencement of the contraction; surface finely striated, with the striæ arching upward along the dorsal line.

This specimen is almost entire, a small portion of the apex having been broken off only. It is one of the most remarkable forms of cephalopoda in the lower strata. The specimens figured in the first volume of the Palæontology of New-York, are such as are usually found, the one now described being the only perfect one known to me.

From the limestone in the neighborhood of Trenton Falls.

ORMOCERAS REMOTISEPTUM, (*n. species.*)

Plate 4, fig. 3.

Cylindrical, gradually tapering; septa moderately convex, distant half the diameter of the tube; siphuncle excentric, large, swelling moderately between the septa, and but slightly contracted at the junction of the septa; character of the external surface unknown.

The specimen described is a fragment which is worn down through the centre of the siphuncle. The proportions of this part of the fossil and the great distance of the septa contrast very strongly with the *Ormoceras tenuifilum* and with other known species of the genus.

This species occurs in the higher part of the Trenton limestone, near Watertown, Jefferson county. (*State Collection.*)

ENDOCERAS LATIVENTRUM. (*n. species*)

Plate 5, fig 1, *a*, *b*.

Cylindric or conical, somewhat rapidly tapering, septa very slightly convex, distant from each other about one-sixth of the diameter of the tube; siphuncle large, entirely lateral, diameter towards the smaller extremity greater than one-third the diameter of the entire tube; embryo tube smooth, slender towards the smaller extremity.

This species is easily distinguished from the *E. proteiforme* in any of its stages by the more rapid diminution of the tube, by the entirely lateral position of the siphuncle, and the closer arrangement of the septa. The fragment described is something more than a foot in length, and is from the central part of the individual, neither the apex or outer chamber being preserved. The embryo tube, which is visible near the apex, is slender and gradually tapering.

Fig. 1 *a*. The specimen natural size, showing the embryo tube above the middle.

Fig. 1 *b*. A section showing the position and size of the siphuncle.

This species occurs in the lower part of the Trenton limestone, near Lowville, in Lewis county. The only specimen known is the one here described, which is placed in the State collection.

COLPOCERAS. (*new genus.*)

Gr. *κολπος*, *sinus*, and *κερας*, *cornu*, in allusion to the deep sinus in the septa.

Cylindrical or sub-cylindrical, septa oblique to the axis of the shell, regularly arched on the dorsal side, and bending downwards in a deep sinus towards the mouth on the ventral side.

COLPOCERAS VIRGATUM.

Plate 5, fig. 2.

Tube virgate, scarcely diminishing towards the apex; surface strongly annulated; annulations arching towards the apex on the back of the shell and bending downwards in an abrupt sinus on the ventral side, and becoming almost entirely lost on the ventral line; septa following the direction of the annulations and arranged between them, except on the ventral side where they encroach a little upon the annulation, being more abruptly bent downwards; septa in the longitudinal section, cutting each side, regularly arched; section when not compressed cylindrical; siphuncle unknown; character of the surface, except the annulations, unknown.

This species occurs near the junction of the Birdseye and Black river limestones in Lewis county.

ASAPHUS EXTANS.

Plate 3, fig. 1.

Reference.—Asaphus extans. Palæontology of New-York, vol. i., page 228, plate 60, fig. 2, *a*, *b*, *c*.

This species, which was described as an asaphus, with some doubt, has again fallen under my observation, and though the specimens yet procured are fragments, they throw some farther light upon the character of the fossil. These specimens are mostly in a bad state of preservation, from a dark shaly layer near the base of the Trenton limestone in Lowville. The character of the caudal shield which is preserved in several specimens is well marked, though the rings of the thorax attached are so much obliterated as to afford very little satisfactory evidence of their number or character. Still there appears to be nine or ten articulations of the thorax, though the junction with the caudal shield is obscure.

In connexion with a mutilated specimen, we have the convex middle lobe of the cephalic shield, with two large and prominent eyes. This specimen does not preserve the margin of the shield, but in another one we find the two lateral portions of the shield preserved in their natural relations to each other, the central lobe being wanting. This fragment proves that the facial suture terminated on the base of the shield as in asaphus, though it is difficult to reconcile the number of articulations of the thorax with that genus. The prominent eyes are also like asaphus, the form of the head is rather more prominent in the middle lobe than known species of the genus, and the posterior projection into a spine is also unlike, while the caudal extremity and character of surface sculpture are all closely like the asaphus.

We shall probably soon be able to have perfect specimens, and as it will prove an interesting species, perhaps this notice may attract attention and excite examination among those living in the neighborhood of the localities where this species has been found.

It is not improbable but the middle lobe of a buckler described (Pal. N. Y., vol. i., page 248, pl. 61, fig 1, *a*, *b*,) as *Asaphus nodostriatus*, may prove to belong to this species, but the same part of the fossil here figured does not preserve the surface markings to enable us to make the comparison. (*State Collection.*)

FOURTH ANNUAL REPORT

OF THE

REGENTS OF THE UNIVERSITY,

ON THE

Condition of the State Cabinet

OF

NATURAL HISTORY,

AND THE

HISTORICAL AND ANTIQUARIAN COLLECTION.

ANNEXED THERETO.

Made to the Senate, January 14, 1851.

ALBANY:
CHARLES VAN BENTHUYSEN, PRINTER TO THE LEGISLATURE,
407 Broadway.
1851.

State of New-York.

No. 30.

IN SENATE, JAN. 14, 1851.

FOURTH ANNUAL REPORT

Of the Regents of the University, on the condition of the State Cabinet of Natural History, and the Historical and Antiquarian Collection annexed thereto.

To the Hon. Sanford E. Church,
President of the Senate:

Sir—I have the honor to transmit the Annual Report of the Regents of the University on the State Cabinet of Natural History, and on the Historical and Antiquarian Collection annexed thereto.

I am, very respectfully,
Your obedient servant,
G. Y. LANSING,
Chancellor.

REGENTS OF THE UNIVERSITY.

Washington Hunt, Governor, *ex officio.*
Sanford E. Church, Lieut. Governor, *ex officio.*
Christopher Morgan, Secretary of State, *ex officio.*
Gerrit Y. Lansing, Chancellor.
John Greig, Vice Chancellor.
Gulian C. Verplanck, LL. D.
John K. Paige.
Erastus Corning.
Prosper M. Wetmore.
John L. Graham.
John McLean.
Gideon Hawley, LL. D.
David Buel.
James S. Wadsworth.
John V. L. Pruyn.
Jabez D. Hammond, LL. D.
John L. O'Sullivan.
Robert Campbell.
Rev. Samuel Luckey, D. D.
Robert G. Rankin.
Philip S. Van Rensselaer.
(One vacancy.)

T. Romeyn Beck, Secretary.

John Gebhard, Jr.,
Curator of the "State Cabinet of Natural History."

STANDING COMMITTEE OF THE REGENTS

Specially charged with the care of the State Cabinet.

1850.

HAMILTON FISH, Governor.
CHRISTOPHER MORGAN, Secretary of State.
ERASTUS CORNING.
JOHN V. L. PRUYN.
ROBERT G. RANKIN.

REPORT.

TO THE LEGISLATURE OF THE STATE OF NEW-YORK.

The Regents of the University

Respectfully Report:

That the various Departments in the State Cabinet have been greatly enlarged during the year that has just expired. It was stated in the last report that many of the Zoological specimens were found to be injured by the moth. A further examination showed the necessity of destroying several, so as, if possible, completely to check the ravages of this destructive insect. Mr. Hurst, the taxidermist, was at the same time directed to replace such as were thus lost to the collection, and also to supply other deficiencies that were still existing. The purchases made on this account will be noticed in the list of articles added.

While the attention of the Board was thus directed, they received a communication from the parents and uncle of the late Mr. De Rham, (the donation of whose minerals, fossils and shells are noticed in the last report,) in which they tendered for the acceptance of the Regents, and through them, for the State, the valuable and splendid collection of birds and other animals made by this gentleman during his life time. This memorial of his ardor and research in the science of natural history, accumulated at an expense of many thousand dollars, and embracing some of the rarest and most valuable specimens, had remained secluded since the period of his lamented decease. It was now only yielded that it might receive a permanent abiding place in the Museum of the State.

Mr. Hurst was directed to repair to New-York and take charge of the collection. On its arrival here its contents were examined and ascertained. The number of animals and birds that will be preserved amounts to upwards of three hundred, and by far the greater part of these are native to our State and country. Of these last, the Regents will only specify the golden eagle, one of the rarest of our birds, and not previously in the Museum, while of the foreign ones, it is sufficient to name the condor of Mexico and the silver pheasant of China. It is only, however, by a personal examination that the variety and importance of these specimens can be appreciated, and the Regents have great reason to be satisfied with the industry and skill displayed by Mr. Hurst, in preserving and arranging them.

Indeed the committee of the Board having this matter specially in charge, have found it imperatively necessary to engage his permanent services, in order to maintain the Zoological department in its present high state of preservation. They have agreed on the sum of two hundred dollars per annum for this purpose, to commence with the first of September last, and they trust that this measure of precaution will meet with the sanction of the Legislature.

In compliance with an arrangement, of some years' standing, with Dr. Fitch of Washington county, that gentleman has added about 300 specimens, belonging to a particular division of insects and native to our State. They are arranged and named, and a catalogue, prepared by Dr. Fitch, accompanies this report.

The Regents may here observe that they have received repeated applications during the last year, to purchase collections in zoology and mineralogy, made within our own borders, but they have been obliged to decline them, in consequence of the means placed at their disposal.

Donations of value have also been received for the Mineralogical and Geological departments, and of these, it will be seen that the specimens presented by Dr. Hough, of St. Lawrence county, are interesting from the illustrations they offer of the mineral wealth of the northern part of the State.

HISTORICAL AND ANTIQUARIAN COLLECTION.

Mr. Lewis H. Morgan, of Rochester, whose report with its illustrations, in the last annual communication of the Regents, has excited such deserved attention, urged upon the Regents, at an early period of the last year, another appropriation for increasing the specimens of Indian manufactures already in the cabinet. The sum of two hundred and fifty dollars was accordingly placed in his hands, and on this there have been received an Indian bark house and a large Indian canoe. The remainder of the articles obtained, are understood at the date of this report to be on their way to this city.

Mr. Morgan, also, promises an additional report on the above, and if received in season, it will be transmitted to the Legislature.

At his instance, also, the Regents were induced to purchase from Mr. Ely S. Parker, an Indian and an engineer in the service of the State, the tomahawk of the once renowned chieftain Cornplanter. The authenticity of this relic is established in an interesting letter from Mr. Parker, a copy of which is herewith transmitted.

It is only necessary to glance over the catalogue of donations to this collection, to be assured of the great interest taken in it, both by strangers and by our fellow citizens.

Dr. Hough has communicated a paper entitled "Notices of Ancient remains of Art in Jefferson and St. Lawrence counties, with illustrations of the same," in continuation of his paper published last year. The Regents recommend its printing with the present report, and they, also, transmit an analysis, by Dr. Salisbury, of a hæmatitic iron ore found in Westchester county.

With the above detail of the proceedings of the committee, charged with the care of the State Cabinet, the Board might be content to close their annual report, were they not deeply impressed with the necessity of obtaining more ample means for the preservation and increase of the "State Cabinet," and thus extending its benefits to the tens of thousands, who, as in the last year, may be expected during the present, as its welcome visitors. An appropriation of two hundred and fifty dollars for the year 1851, is the sole amount now at the disposal of the Regents. This should be increased to at least one thousand dollars for the present and the next year. Again, every available foot of ground for the proper disposition of the collection is occupied and the Board have hence received, with great pleasure, an official notice that the Commissioners of the Land Office and the New-York State Agricultural Society will present to the Legislature, plans for increasing the building now devoted to the best interests of science and the arts, in a manner commensurate with the dignity and the high destinies of the State.

It is an unpleasant, but a necessary duty to add, that on an application from the local committee of New-York, appointed to forward objects of interest, both natural and artificial, to the approaching exhibition in London, some doubts were thrown out whether the State possessed a collection of fossil remains in its own right. This matter will, however, be brought before the Legislature by another commission, and the Regents, therefore, content themselves with the statement of the circumstance, and, also, that Professor Hall has promised to furnish a catalogue of the fossils, now the property of the State, so far as they are described in the 1st and 2nd volumes of his Paleontology.

This, at whatever time it may be received, will be transmitted to the Legislature.

It has been further suggested, and the idea seems to be gaining favor, that the specimens of Indian manufactures, now in the collection, and those which are presently expected, should under the care of a watchful guardian, be dispatched to this Exhibition, so remarkable, even if its least sanguine auguries are accomplished. But the Regents have not the means, nor the power, to further such a plan, and it will remain with the Legislature, alone, to sanction it with their necessary assent.

By order of the Regents,

G. Y. LANSING, *Chancellor.*

T. ROMEYN BECK, *Secretary.*

Papers accompanying this Report.

A. Account current of receipts and expenditures, 1850.

B. Catalogue of the Quadrupeds, Birds, Reptiles, Amphibians, Fishes, &c., added to the State Cabinet from January 1, 1850, to January 1, 1851.

In this will be found a list of the collection of the late Mr. De Rham, so far as the same has been named and arranged.

C. Catalogue of Insects added to the State Cabinet of Natural History, December, 1850. By Asa Fitch, M. D.

D. Donations to the Botanical Collection.

E. List of Minerals, Geological specimens and Fossils, added from January 1st, 1850, to January 1st, 1851.

F. Additions to the Historical and Antiquarian collection, by donation and purchase, from January 1st, 1850, to January 1st, 1851.

G. Letters of Mr. Ely S. Parker, concerning Cornplanter's Tomahawk.

H. Notices of ancient remains of art in Jefferson and St. Lawrence counties, by Franklin B. Hough, M. D.

I. Analysis of a specimen of a Hæmatitic iron ore, by James H. Salisbury, M. D., Chemist to the New-York State Agricultural Society.

K. References to various writings, relating to the NATURAL HISTORY OF NEW-YORK, that have appeared during the year.

Received since the adoption of the report by the standing committee, but previous to its presentation to the Regents.

L. Catalogue of specimens of the Rocks and Fossils in the Gray Sandstone, Medina Sandstone, Clinton Group, Niagara Group, Onondaga Salt Group, and a part of the Water Lime Group; being a contiuation of the Catalogue of the State Geological Collection, as far as the Fossils are named and described, by James Hall.

(A.)

The Regents of the University, in account current with the appropriations towards preserving and increasing the "State Cabinet of Natural History," and the Historical and Antiquarian Collection, annexed thereto, and for defraying the incidental expenses of the same.

	To balance from previous account (see Senate Doc. 1850, No. 75, p. 15),	$98 13
1850.		
Jany. 2	To cash received from the Comptroller, being the annual appropriation for 1850,	250 00
April 13	To cash received from the Comptroller, being the special appropriation for the increase of the cabinet, and the payment of contingent expenses,	500 00
		$848 13

CR.

1850.		
Jany. 8	By cash paid Jas. Henry, stationery for 1849, including two folio volumes, for recording donations and the names of visitors, No. 1,	14 32
	By cash paid Lewis H. Morgan, expenses of travelling and other contingencies in the collection and arrangement of the Indian collection, No. 2,	18 00
Jany. 9	By cash paid J. A. Hurst, for a preserved Buck and sundry birds, No. 3,	73 00
Jany. 18.	By cash paid J. A. Hurst for 21 days work at the cabinet, clearing out the moth, with sundries for the same, No. 4,	65 50
	Am't carried forward,	$

	Amount brought forward, ...		$
March 8	By cash paid Wm Boardman for sundry erections and repairs at the State Cabinet, No. 5,		10 89
Mar. 19	By cash paid J. A. Hurst, for a collection of preserved animals, birds and fishes, principally to supply deficiencies occasioned by destruction from the moth, No. 6, ...		159 25
Apr. 12	By cash paid John Gebhard, for contingent expenses and purchases, No. 7, ...		5 72
Apr. 27	By cash paid Ely S. Parker for the tomahawk formerly belonging to Cornplanter, No. 8,..		20 00
June 4	By cash paid J. A. Hurst, for a preserved silver eel, ...	14 00	
	for a preserved Buffalo pike, ...	10 00	
	For expenses going to New-York, packing and transporting to Albany the De Rham collection of birds, No. 9, ...	53 37	
			77 37
June 4	By cash paid John Gebhard for contingent expenses and purchases, No. 10, ...		4 80
June 17	By cash paid Lewis H. Morgan, advance, to purchase indian manufactures, No. 11, ...		250 00
July 3	By cash paid railroad company for transportation of Indian canoe and house, No. 12,..		8 70
Sept. 2	By cash paid Wells & Co., transportation of Dr. Hough's donation, and other contingent expenses, No. 13, ...		5 80
Sept. 6	By cash J. A. Hurst, for sundry preserved animals and birds, No. 14, ...		64 50
Dec. 18	By cash paid Jno. Gebhard for various purchases and contingent expenses, No. 15, ...		6 12
Dec 18	By cash paid James Henry's acct. for stationery during 1850, No. 16, ...		8 65
			$792 62
	By balance to new account,................		55 51
			$848 13

(Copy.)

ALBANY CITY BANK, Dec., 28, 1850.

I certify that there is the sum of fifty-five dollars and fifty-one cents standing to the credit of the "State Cabinet of Natural History" in the books of this bank.

(Signed) JNO. T. MARSHALL,
Book-keeper

We have examined the foregoing account and believe it to be correct, having compared the same with the vouchers.

HAMILTON FISH,
ERASTUS CORNING,
Albany, Dec. 30, 1850. CHRISTOPHER MORGAN.

(B.)

CATALOGUE

OF THE

QUADRUPEDS, BIRDS, REPTILES, AMPHIBIANS, &c.,

ADDED TO THE

State Cabinet of Natural History,

(Including the Collection of the late H. Casimir De Rham, Jr.)

FROM JAN. 1, 1850, TO JAN. 1, 1851.

MAMMALIA.

ORDER CARNIVORA.

FAMILY SORECIDÆ.

Zoology—Part I.

Scalops aquaticus, Common Shrew Mole, - - - - p. 15

Presented by Theodore Teed, of Croton, Westchester county.

FAMILY FELIDÆ.

Lyncus borealis, The Northern Lynx, - - - - - - 50

This specimen was captured in Delaware county, New-York.

ORDER RODENTIA.

FAMILY SCIURIDÆ.

Sciurus hudsonicus, The Red Squirrel, (male & female,) - 61
Pteromys volucella, The Small American Flying Squirrel, 65

FAMILY HYSTRICIDÆ.

Hystrix hudsonius, The North American Porcupine, - - 77
Hystrix hudsonius, Skeleton of the North American Porcupine.

Presented by Prof. James Hall.

ORDER UNGULATA.

FAMILY CERVIDÆ.

Cervus virginianus, The American Deer, (buck,) - - - 113

BIRDS.

ORDER ACCIPITRES.

FAMILY FALCONIDÆ.

Zoology—Part II.
Buteo pennsylvanicus, The Broad-winged Buzzard, (m.) 11
Falco sparverius, American Sparrow Hawk, (male & f.) 16
Astur atricapillus, American Goshawk, (female,) - - 19

FAMILY STRIGIDÆ.

Surnia nyctea, Snow Owl, (male and female,) - - - - - 22
Bubo asio, Little Screech Owl, (male,) - - - - - - - - 25
Syrnium cinereum, Great Grey Owl, (male,) - - - - - 26
Otus palustris, Short-eared Owl, (male,) - - - - - - 28
Ulula nebulosa, Barred Owl, (male,) - - - - - - - - 29

ORDER PASSERES.

FAMILY AMPELIDÆ.

Bombycilla carolinensis, Cedarbird, (male and female,) - 44

FAMILY ALCEDINIDÆ.

Alcedo alcyon, Belted Kingfisher, (female,) - - - - - 45

FAMILY MERULIDÆ.

Orpheus carolinensis, Catbird, (male,) - - - - - - - 69
Merula migratoria, American Robin, (female,) - - - . 70
Merula olivacea, Olive-backed Thrush, (male,) - - - - 73

FAMILY MUSCICAPIDÆ.

Muscicapa ruticilla, American Redstart, (female,) - - 111

FAMILY CORVIDÆ.

Garrulus cristatus, Blue Jay, (male,) - - - - - - -	129
Corvus americanus, Common Crow, (male,) - - - - - -	132

FAMILY QUISCALIDÆ.

Quiscalus versicolor, Common Crow Blackbird, (male,)	136
Quiscalus ferrugineus, Rusty Crow Blackbird, (m. & f.)	137
Sturnella ludoviciana, Meadow Lark, (male and fem.) -	138
Icterus baltimore, Golden Oriole, (male,) - - - - -	139
Icterus phœniceus, Red-winged Oriole, (male,) - - - -	141
Molothrus pecoris, Cow Bunting, (male and female,) -	143
Dolichonyx oryzivorus, Boblink, (male,) - - - - - -	144

FAMILY FRINGILLIDÆ.

Struthus hyemalis, Snowbird, (male,) - - - - - - -	147
Fringilla Iliaca, Fox-colored Sparrow, (male,) - - -	149
Loxia leucoptera, White-winged Crossbill, (male,) - -	183

FAMILY PICIDÆ.

Picus pileatus, Crested Woodpecker, (m. & f.) - - -	184
Picus villosus, Hairy Woodpecker, (male,) - - - - -	186
Picus pubescens, Downy Woodpecker, (m. & f.) - - - -	187
Picus arcticus, Arctic Woodpecker, (male,) - - - - -	190
Picus auratus, Golden-winged Woodpecker, (m. & f.) -	192

FAMILY CUCULIDÆ.

Coccyzus erythrophthalmus, Black-billed Cuckoo, (male,)	195

FAMILY COLUMBIDÆ.

Ectopistes migratoria, Wild Pigeon, (m. & f.) - - - -	196

ORDER GALLINÆ.

FAMILY TETRAONIDÆ.

Ortyx virginiana, American Quail, (female,) - - - - -	202
Tetrao cupido, Pinnated Grouse, (male,) - - - - - -	205

ORDER GRALLÆ.

FAMILY CHARADRIDÆ.

Charadrius vociferus, Kildeer Plover, (female,)	212
Charadrius virginiacus, Golden Plover, (female,)	213

FAMILY SCOLOPACIDÆ.

Totanus macularius, Spotted Sand-lark, (m. & f.)	246
Totanus flavipes, Yellow-legs, (male,)	248
Totanus chloropygius, Solitary Tatler, (female,)	249
Scolopax wilsoni, Common American Snipe, (female,)	256

FAMILY RALLIDÆ.

Ortygometra carolina, Sora Rail, (female,)	262

ORDER LOBIPEDES.

FAMILY PODICIPIDÆ.

Fulica americana, American Coot, (male,)	272

ORDER NATATORES.

FAMILY LARIDÆ.

Larus zonorhynchus, Common American Gull, (female,)	308
Larus bonapartii, Bonaparte's Gull, (male,)	311

FAMILY ANATIDÆ.

Mergus merganser, Buff-breasted Sheldrake, (female,)	318
Mergus cuculatus, Hooded Sheldrake, (female,)	320
Fuligula glacialis, Old-wife or Squaw Duck, (male,)	328
Fuligula glacialis, Old-wife, (summer dress,) (m. & f.)	328
Fuligula albeola, Buffle-headed Duck, (male,)	329
Fuligula clangula, Whistler Duck, (male,)	330
Anas sponsa, Wood Duck, (male,)	338
Anas discors, Blue-winged Teal, (male,)	339
Anas carolinensis, Green-winged Teal, (male,)	340
Anas acuta, Pin-tail Duck, (m. & f.)	341

From Charles Martin, U. S. Navy.

Eggs of two species of Birds, from the Amazon River 80 or 90 miles above Para, a city of Brazil.

REPTILES.

ORDER I. TESTUDINATA.

FAMILY CHELONIDÆ.

	Zoology—Part III.
Chelonura serpentina, The Snapping Turtle, (m. & f.)	p. 8
Emys terrapin, The Smooth Terrapin,	11
Presented by John McMichael, of Albany.	
Emys picta, The Painted Tortoise,	12
Cistuda carolina, Common Box Tortoise,	24
Presented by Lawrence R. Vrooman, of Albany.	

ORDER III. OPHIDIA.

FAMILY COLUBERIDÆ.

Coluber constrictor, The Black-snake,	p. 35
Coluber alleghaniensis, Pilot Black-snake,	36
Coluber eximius, The Milk-snake,	38
Coluber occipitomaculatus. (Storer, Mass. Rep. p. 230.)	41
Two specimens, presented by Asa Fitch, of Salem, Washington County. DeKay describes this Coluber as extra-limited. But the two specimens obtained by Dr. Fitch, in Salem, in this State, authorizes us to place this in the Catalogue of New-York Reptiles.	
Tropidonotus dekayi, The Small Brown-snake.	46
Heterodon platyrhinos, Hog-nosed-snake.	51

FAMILY CROTALIDÆ.

Crotalus durissus, Northern Rattle-snake.	55
Five specimens taken near Lake George, and presented by Joshua Talford Blanchard, of Saratoga Springs.	

AMPHIBIA.

FAMILY RANIDÆ.

Zoology—Part III.

Rana pipiens, The Bull-frog, (large,) - - - - - - - - p. 60

Rana pipiens, The Bull-frog, (large,) - - - - - - - 60

This specimen was taken at Greenbush, and presented by B. B. Kirtland.

Bufo americanus, Common American Toad. - - - - - 66

FISHES.

ORDER I. SPINE-RAYED.

FAMILY TRIGLIDÆ.

Zoology—Part V.

Prionotus lineatus, Banded Gurnard, - - - - - - p. 45

Presented by Elijah Simmons of Albany.

ORDER II. ABDOMINAL.

FAMILY SALMONIDÆ.

Salmo fontinals, 2 specimens, the Brook Trout, - - - p. 235

From East Canada Creek.

Salmo fontinalis, (Varietas) Brook Trout, (2 specimens,) p. 235

From one of the lakes in Hamilton county.

Salmo confinis, The Lake Trout, - - - - - - - - - p. 238
From Lake Ontario.

From Dr. Charles Martin, U. S. Navy, two large fish scales.

FAMILY SAURIDÆ.

Lepidosteus bison, The Buffalo Bony Pike, - - - - - p. 271
From Lake Ontario.

Lepidosteus bison, The Buffalo Bony Pike, - - - - - p. 271
From Lake Champlain.

Presented by John Bratt.

ORDER IV. APODAL.

FAMILY ANGUILLIDÆ.

Anguilla tenuirostris, Common New-York Eel, - - - p. 310
Taken in the Chenango canal, near Utica, in the year 1849. Length, five feet half inch; weight, 12½ lbs.

CARTILLAGINOUS FISHES.

Presented by Dr. Charles Martin, U. S. Navy.

1. Spine of the ray.
2. Double spine of the ray.
3. Palatal bone of a fish.

FAMILY SYNGNATHIDÆ.

Hippocampus hudsonius, Hudson river Sea Horse, - - - p. 322
Presented by John New of Albany.

ANNELIDA.

Gordius aquaticus, (Linn.,) Hair Worm.
From Albany.

Presented by Charles H. Payne, of Schuylerville.

CONCHOLOGY.

From Henry Rousseau, of Troy, Rensselaer co.

ZOOLOGY—Part V.

VENUS NOTATA, 2 specimens. - - - - - - - - - - p. 218

From Rockaway, Long-Island.

From Theodore Teed, Esq., of Croton, Westchester co.

HELIX ALBOLABRIS, 5 specimens. - - - - - - - p. 26

From Croton, Westchester county.

From Almerin Marks, of Durham, Greene county.

These specimens were obtained at the Sandwich Islands by Dwight Baldwin, a Missionary at that place.

TURBO PHASIANUS. Lin.
CERITHUM ——. 4 specimens.
TURIBINELLA CORNIGER.
MUREX ——.
STROMBUS URCEUS. 2 specimens.
STROMBUS LUHUANUS. 4 specimens.
STROMBUS ——. 2 specimens.
BUCCINUM PAPILLOSUM.
TEREBRA ——.
CYPRÆA EUROPEA. 2 specimens.
CYPRÆA CAPUT SERPENTIS.
CYPRÆA HISTRIO.

From Doct. Charle Martin of the United States Navy.

ACHATINA —. 13 specimens From St. Domingo.
HELIX ——. From St. Domingo.
CYPRÆA TIGRIS. From Havanna.
CYPRÆA ——.
FUSUS ——.

RADIATA.

CLASS POLYPI.

From Richard H. Pease, of Albany.

Meandrina ——.
Pocillopora ——. 3 specimens.
Madrepora muricata. 3 specimens.
Madrepora ——.
Madrepora ——.
Porites ——.

CATALOGUE OF THE COLLECTION OF THE LATE H. CASIMIR DE RHAM, JUN., NOW IN THE STATE CABINET.

[Extract of a letter from Nathaniel F. Moore, LL. D., to the Secretary of the Regents, dated May 16, 1850.]

Dear Sir,—Mr. and Mrs. De Rham have authorised me to inform you of their readiness to give to the State Cabinet of Natural History, a collection of birds made by their son, H Casimir, provided any person shall be empowered by the Regents or by yourself, in their behalf, to receive it here, and to provide for its safe removal, before the month of July next.

My late nephew's friends have been much gratified at the manner in which the recent donation of minerals and shells that had belonged to him has been acknowledged, and his parents seeing into what careful and skilful hands they had consigned these things, desire me to entrust those birds also to the same. It grieves them to observe, that in spite of all their care, every year makes some inroad upon the collection, and their reluctance to part with a valued memorial of their son has therefore been surmounted by the hope that the Curators of the State Cabinet will be able to preserve what yet remains of it, much better and longer than they could themseves.

[Extract of a letter from Mrs. De Rham to the Secretary, dated New-York, June 8, 1850.]

"Permit me to thank you for your obliging letter, announcing the safe arival of the collection of birds at their new and honorable home.

"I deeply regret the necessity of resigning them to the care of strangers, but I am quite convinced that it is the only chance of preserving them, and also the name and memory of my dear son in the world of science."

MAMMALIA.

ORDER CARNIVORA.

FAMILY SORECIDÆ.

Zoology—Part I.

Condylura cristata, Star-nose Mole, (m. f. & 2y.) - - 12
Sorex dekayi, De Kay's Shrew, - - - - - - - - - - 17

FAMILY URSIDÆ.

Procyon lotor, Raccoon, - - - - - - - - - - - - - 26

FAMILY MUSTELIDÆ.

Mephitis americana, Skunk, - - - - - - - - - - 29
Mustela fusca, Brown Weasel, - - - - - - - - - 35
Putorius noveboracensis, New-York Ermine, - - - - 36
Putorius vison, Mink, - - - - - - - - - - - - 37

FAMILY CANIDÆ.

Vulpes fulvus, Red Fox, - - - - - - - - - - - 44

FAMILY FELIDÆ.

Lyncus borealis. Northern Lynx, - - - - - - - - 50

ORDER RODENTIA.

FAMILY SCIURIDÆ.

Sciurus leucotis. Little Grey Squirrel, (male & female,) 58
Sciurus vulpinus. Fox Squirrel, - - - - - - - - 59
Sciurus niger. Black Squirrel, (male & female,) - - - 60
Sciurus hudsonicus. Red Squirrel, (male & female,) - - 61
Sciurus hudsonicus. Red Squirrel, (Albino,) - - - -
Sciurus striatus. Striped Squirrel, - - - - - - - 62
Pteromys volucella. Flying Squirrel, - - - - - - 65

FAMILY ARCTOMIDÆ.

ARCTOMYS MONAX.	Woodchuck, - - - - - - - - -	68

FAMILY GERBILLIDÆ.

MERIONES AMERICANUS.	Deer Mouse, - - - - - - - -	70

FAMILY CASTORIDÆ.

FIBER TIBETHICUS.	Muskrat or Musquash, (m. & f.) - -	75

FAMILY MURIDÆ.

MUS LEUCOPUS.	Jumping Mouse, - - - - - - - - -	82
ARVICOLA RUFESCENS.	Tawney Meadow Mouse, - - - -	85

FAMILY LEPORIDÆ.

LEPUS NANUS.	American Grey Rabbit, - - - - - - -	93
LEPUS AMERICANUS.	Northern Hare, (male, fem. & young,)	95

ERINACEUS EUROPÆUS. Hedgehog, (old and young,) England.
CAPRA IBEX. Lin. Skull and horns of the male. From the Alps.

BIRDS.

ORDER ACCIPITRES.

FAMILY VULTURIDÆ.

	Zoology, N. Y.—Part II.
Cathartes gryphus, Condor, (male,) From the Andes.	
Cathartes aura, Turkey Buzzard, (male,)	p. 2

FAMILY FALCONIDÆ.

Aquila chrysætos, Golden Eagle, (male,)	p. 4
This fine specimen was shot a few years since at Islip, Suffolk county, and is the identical one referred to by De Kay in his Zoology of N. Y., Part II. page 4.	
Haliaetos leucocephalus, Bald Eagle, (male and female,)	5
Pandion carolinensis, American Fish Hawk, (male,) with a fish in the beak,	6
Buteo sancti-joannis, Rough-legged Buzzard, or Black Hawk, (male and female,)	7
Buteo borealis, Red-tailed Buzzard, (male,)	9
Nauclerus furcatus, Swallow-tailed Hawk, (male,)	12
Falco columbarius, Pigeon Hawk, (male and female,)	15
Astur atricapillus, American Goshawk, (male,)	19

FAMILY STRIGIDÆ.

Surnia funerea, Hawk Owl,	21
Surnia nyctea, Snowy Owl, (male,)	22
Bubo asio, Little Screech Owl, (male and female,)	25
Otus palustris, Short-eared Owl, (male,)	28
Ulula nebulosa, Barred Owl, (male and female,)	29
Ulula acadica, Acadian Owl, (male,)	30

ORDER PASSERES.

FAMILY CAPRIMULGIDÆ.

Zoology—Part V.
Caprimulgus vociferus, Whippoorwill, (male,) - - - 32

FAMILY HIRUNDINIDÆ.

Hirundo purpurea, Purple Martin, (male,) - - - - - 37
Hirundo fulva, Cliff Swallow, (male and female,) - - 41

FAMILY AMPELIDÆ.

Bombycilla carolinensis, Cedar Bird, (female,) - - - 44

FAMILY ALCEDINIDÆ.

Alcedo alcyon, Belted Kingfisher, (young male,) - - - 45

FAMILY CERTHIDÆ.

Troglodytes ædon, House Wren, (male,) - - - - - 53
Troglodytes ludovicianus, Mocking Wren, (male,) - - 55
Troglodytes palustris, Marsh Wren, (male,) - - - - 56

FAMILY PARIDÆ.

Parus bicolor, Crested Tit, (two males,) - - - - - 59

FAMILY SYLVIADÆ.

Regulus satrapa, Golden-crested Kinglet, (male,) - - 62
Sialia wilsoni, Bluebird, (m. & f.) - - - - - - - 65

FAMILY MERULIDÆ.

Orpheus polyglottus, Mockingbird, (male,) - - - - 67
Orpheus rufus, Brown Thrush, (male,) - - - - - - 68
Orpheus carolinensis, Catbird, (m. & f.) - - - - - 69
Merula migratoria, American Robin, (m. & f.) - - - 70

FAMILY SYLVICOLIDÆ.

Trichas philadelphia, Mourning Warbler, (m. & f.) - - 81
Vermivora pennsylvanica, Worm-eating Warbler, (m. & f.) 82
Vermivora solitaria, Blue-winged Warbler, - - - - - 83

Vermivora chrysoptera, Golden-winged Warbler, (male,) p. 84
Vermivora peregrina, Tenessee Warbler, (male,) - - 85
Vermivora celata, Orange-crowned Warbler, (young m.) 87
Sylvicola maculosa, Spotted Warbler, (male,) - - - 90
Sylvicola pardalina, Spotted Canada Warbler, (male,) - 91
Sylvicola blackburniæ, Blackburnian Warbler, (male,) 93
Sylvicola castanea, Bay-breasted Warbler, (male,) - - 94
Sylvicola striata, Black-poll Warbler, (male,) - - - 95
Sylvicola discolor, Prairie Warbler, (male,) - - - - 96
Sylvicola canadensis, Black-throated Blue Warbler, (y'g m.) 98
Sylvicola æstiva, Summer Yellowbird, (m. & f.) - - - 99
Sylvicola pinus, Pine Warbler, (female,) - - - - - 101
Sylvicola icterocephala, Chesnut-sided Warbler, (male,) 102
Sylvicola parus, Hemlock Warbler, (2 males,) - - - 103
Sylvicola formosa, Kentucky Warbler, (male,) - - - 105
Wilsonia mitrata, Hooded Warbler, (female,) - - - - 107
Wilsonia pusilla, Green Black-capped Warbler, (male,) 108
Culcivora cœrulea, Blue-grey Gnatcatcher, (male,) - - 109

FAMILY MUSCICAPIDÆ.

Muscicapa ruticilla, American Redstart, (m. & f.) - - 111
Tyrannus crinitus, Great-crested Kingbird, (male,) - - 119

FAMILY VIREONIDÆ.

Vireo olivaceus, Red-eyed Greenlet, (male,) - - - - 124
Icteria viridis, Yellow-breasted Chat, (male,) - - - - 126

FAMILY LANIIDÆ.

Lanius septentrionalis, Northern Butcherbird, (2 males,) 127

FAMILY CORVIDÆ.

Garrulus cristatus, Blue Jay, (male,) - - - - - - 129
Garrulus canadensis, Canada Jay, (male,) - - - - - 130
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AMERICAN BIRDS DESCRIBED BY AUDUBON, WHICH HAVE NOT BEEN OBSERVED IN THE STATE OF NEW-YORK.

The Volume and Page refer to the Edition of Audubon's Birds of America, in 7 Volumes,—the publication of which commenced in 1840.

VOLUME I.

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VOLUME III.

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Galbula viridis. (Oken.) 2 specimens. Africa.

In addition to the Birds named in the preceding catalogue of the De Rham Collection, there are twenty-two specimens of Foreign Birds, whose specific names have not been determined.

RECAPITULATION.

(DE RHAM COLLECTION.)

	No. of Specimens.
Mammalia, - - - - - - - - - - - - - - -	36
Birds, - - - - - - - - . - - - - - - -	310
Total, - - - - - - - - - - - - - -	346

(C.)

CATALOGUE

WITH REFERENCES AND DESCRIPTIONS

OF THE

INSECTS

COLLECTED AND ARRANGED FOR THE

State Cabinet of Natural History,

BY ASA FITCH, M.D.

The following paper comprises all the New-York *Insects of the sub-order Homoptera* known to me, except some of the minute species, to determine which required further researches. The species and genera that are here presented as new, are indicated by an asterisk preceding the scientific name, and a brief description of these, embracing their essential characters, is added. To the described species is appended a reference to the name of the author and the place where the original description will be found.

In the generic arrangement of these insects, Amyot and Serville's *Hist. Nat. des Ins. Hemipteres*, Paris, 1843, and Westwood's Synopsis of British Genera, have been my chief guides. An acknowledgment is due to the Rev. D. Zeigler, of York, Pa., for a copy of Germar's paper on the genera Clastoptera, &c., in the *Zeitschrift f. d. Entom.*; and to Dr. T. W. Harris, of Harvard University, who has been so kind as to place temporarily in my hands his entire collection of Homoptera, including the several species named in his Catalogue, and also those magazines and other publications which contain all the more important papers of Germar, Spinola and Fallen upon this order of insects. I regret that these latter favors were not received in season for me to avail myself of them in preparing the following paper, though it is not probable they would vary it in any important point from the shape in which it is here presented.

Albany, February 22d, 1851.

INSECTS.

FAMILY CICADIDÆ.

CICADA. Linn.

Frosted Cicada, *C. pruinosa*, (Say.) Jour. Acad. Nat. Sci., vol. iv., p. 330. The specimen was taken near the east end of Long Island. No. 609, male.

Dog-Day Cicada, *C. canicularis*, (Harris.) Inj. Ins., p. 175. No. 610, male; 611, female.

Creviced Cicada, *C. rimosa*, (Say.) Jour. Acad. Nat. Sci., vi. 235. Two specimens were taken in Washington county the middle of June, 1845. As these are the only ones I have ever met with, I am led to suspect that, like the following, this species may be periodical in the time of its appearance. No. 612, female.

Seventeen-year Locust, *C. septendecim*, (Linn.) Syst. Nat., ii. 708. No. 613, male.

FAMILY FULGORIDÆ.

CIXIUS. Lat.

Stigma-spotted Cixius, *C. stigmatus*, (Say.) Jour. Acad. Nat. Sci., iv. 336. On various trees and shrubs. No. 614, male; 615, female.

Pine Cixius, **C. pini*. Elytra with a few fulvous, cloud-like spots; destitute of a larger black stigma and black band at the base. Length to the tip of the elytra, 0·23, (twenty-three hundredths of an inch.) Found on spruce, fir, and pine. Smaller than the preceding, and evidently distinct. No. 616, male; 617, female.

IMPUNCTATE CIXIUS, **C. impunctatus.* White, dorsum yellow; two bands on the front, two dots on the vertex, and two on the prothorax, black; elytra brownish-pellucid, immaculate, nerves impunctate. Length, 0·23. Found on oaks. No. 618, male.

Var. *a.* The whole upper half of the face black. No. 619, male.

FIVE-LINED CIXIUS, *C. quinquelineatus*, (Say.) Jour. Acad. Nat. Sci., vi. 241. No. 620, female.

DELPHAX. FAB.

FIELD DELPHAX, **D. arvensis.* Pallid-yellow, immaculate; elytra and wings pellucid. Length 0·17. Common in fields of wheat early in June. No. 622, male; 623, female.

DORSAL-STRIPED DELPHAX, **D. dorsalis.* Dull yellow, dorsal vitta white; elytra dusky, middle apical nerve and a small dot on the tips of the outer apical nerves black; facial carinæ white, interstices black; tergum black, with a dorsal and lateral vitta orange red; legs pale yellow, striate with black. Length, 0·20. No. 621, male.

OTIOCERUS. KIRBY.

DEGEER'S OTIOCERUS, *O. degeerii*, (Kirby.) Trans. Linn. Soc., xiii. 16. On various trees. No. 624, male; 625, female.

COQUEBERT'S OTIOCERUS, *O. coquebertii*, (Kirby.) Tr. Linn. Soc. xiii. 18. Sometimes abundant on grape vines; also on beech and oak trees. No. 626, male; 627, female.

Var. *a.* The elytral vitta dividing into three branches. No. 628.

b. The vitta not prolonged upon the sides of the thorax. No. 629.

WOLF'S OTIOCERUS, *O. wolfii*, (Kirby.) Tr. Linn. Soc., xiii. 19. Taken on walnut bushes. No. 630, male.

ABBOT'S OTIOCERUS, *O. abbotii*, (Kirby.) Tr. Linn. Soc., xiii. 17. Taken on oaks. No. 631, male; 632, female.

KIRBY'S OTIOCERUS, **O. kirbyii.* White; elytra without dots, with a faint brownish band from the middle of the inner to the apex of the outer margin, and spot on the apex of the inner margin. Length, 0·42, to the tip of the elytra. Found on oaks. No. 633, male; 634, female.

ANOTIA. Kirby.

Bonnet's Anotia, *A. bonnetii*, (Kirby.) Tr. Linn. Soc., xiii. 21. On willows, about the middle of September. No. 635, male; 636, female.

PŒCILOPTERA. Lat.

Frosted Pœciloptera, *P. pruinosa*, (Say.) Jour. Acad. Nat. Sci., vi. 237. No. 637, male; 638, female.

Common Pœciloptera, **P.* (?) *vulgaris*. Blackish-pruinose; elytra with a transverse row of pellucid-white points beyond the middle; legs pallid, femurs blackish; ventral segments edged with orange; medial carina sometimes obsolete. Seems more allied to this than any other genus, though the simple neuration of its elytra, and some other marks, present discrepancies to this association. Length, 0·20. Common on various shrubs and trees. No, 639, male; 640, female.

FAMILY MEMBRACIDÆ.

ENCHOPHYLLUM. Amy. and Serv.

Two-spotted Enchophyllum, *E. binotatum*, (Say.) Appendix to Long's Exped., p. 301. Common on numerous plants and trees. No. 641, male; 642, female.

Var. *a*. Color brown. No. 643.

Broad-footed Enchophyllum, *E. latipes*, (Say.) App. to Long's Exp., p. 302. No. 644, female.

ENTILIA. Germar.

Notch-backed Entilia, *E. sinuata*, (Fab.) Entom. Syst. Suppl., p. 513. No. 645, male; 646, female.

Sub-species **torva*. Front somewhat concave, causing the anterior foliole to incline slightly forward. No. 647.

Hollow-backed Entilia, *E. concava*. (Say.) App. to Long's Exp., p. 301. That part of the generic definition which represents the thorax as "foliaceous and deeply notched" does not apply to this species. In all other respects this is so closely related to the preceding as scarcely to call for a generic separation. Both species occur on various herbs and trees, particularly on the Canada thistle, where the larvæ are, like plant-lice, attended by ants, which protect them and subsist upon their saccharine secretions. No. 648, male; 649, female.

*CARYNOTA.

(Gr. ϰαρα, roundish, νωτος, the back.) Head broad, triangular; thorax in form of a half cone, not compressed above into a sharp or foliaceous edge; elytra with five terminal cells, the apical triangular with its end rounded; border broad, slightly wrinkled; nerves strong, elevated. Allied to *Gargara*, from which genus however, our species are excluded by the form of the head and of the apical cellule.

BUTTERNUT CARYNOTA. *C. mera*, (Say.) Jour. Acad. Nat. Sci., vi. 301. On the butternut. No. 650, female.

OAK, OR ARCH-STRIPED CARYNOTA, *C. arquata*, (Say.) Jour. Acad. Nat. Sci., vi. 302. On different species of oaks. No. 651, female; 652, male (?)

SMILIA. GERMAR.

UNADORNED SMILIA, *S. inornata*, (Say.) Jour. Acad. Nat. Sci., vi. 299. Common on oaks, chestnut, hickory, &c. No. 653, male (?); 654, female.

Var. *a*. Edge of the keel not fuscous-black. No. 655.

UNARMED SMILIA, *S. inermis*, (Fab.) Ent. Syst. iv. 15. On oaks. No. 656, male; 657, female.

V-MARKED SMILIA, *S. vau*, (Say.) Jour. Acad. Nat. Sci., vi. 299. Abundant, particularly upon the white oak. No. 658, female.

Var. *a*. Elytra fuliginous throughout. No. 659.
b. Elytra hyaline throughout. No. 660.
c. The thoracic bands margined with black. No. 661.
d. Front tinged with sanguineous. No. 662.
e. Head white. No. 663.
f. Head white, with sparse large black punctures. No. 664.
g. Posterior thoracic band obsolete. No. 665.
h. Bands obsolete; a fulvous spot above each eye. No. 666.
i. White; apex of the thorax and a spot above each eye fulvous. No. 667.
j. Apex of the thorax white. No. 668.

Chestnut Smilia, **S. castaneæ*. Fuscous, more or less green when recent; head, anterior edges of thorax and all beneath, bright yellow; elytra hyaline with an apical and large longitudinal basal spot, fuscous. Length, male 0·25, female 0·30. Common on the chestnut. No. 669, male; 670, female.

Var. *a*. Face with scattered fuscous dots. No. 671.

Oak Smilia, **S. querci*. Black, with an abbreviated bright yellow dorsal vitta, which is commonly interrupted near its tip; legs pale yellow. Length, 0·22. On oaks. No. 672, male.

Var. *a*. Dorsal vitta not interrupted. No. 673.

Striped Smilia, *S. vittata*, (Amyot and Serv.) Hemipt. p 539. Common on the red and black oak. No. 674, female.

Subsp. **guttata*. The oblique stripe replaced by a few greenish spots or dots. No. 675.

Eared Smilia, **S. auriculata*. Bright green, when faded mottled with yellow, immaculate; humeral angles somewhat salient, rounded; keel evenly rounded, much elevated, anteriorly advanced and overhanging the head; elytra scarcely exceeding the tip of the thorax. Length, from the front 0·35, from the anterior end of the keel 0·40; height 0·23. On oaks. Rare. No. 676, male.

*CYRTOISA.

(Gr. κυρτος, curved, hump-backed.) Humeral angles rounded, not salient; dorsum compressed-foliaceous, forming a regularly arched keel highest near its middle, and at most with a slight concavity posteriorly; apical cellule triangular, its end rounded. Differs from Smilia in having the keel most elevated in its middle instead of anteriorly.

Marbled Cyrtosia, *C. marmorata*, (Say.) Jour. Acad. Nat. Sci., vi. 301. On oaks. No. 677, female.

Windowed Cyrtosia, **C. fenestrata*. Yellow marbled with rufous; a pellucid spot behind the summit of the keel and a smaller one half way to the apex; an oblique yellow vitta below the anterior spot, margined with fuscous or sanguineous; tip of the thorax reaching beyond the terminal cells of the elytra. Male black, the pellucid spots almost obsolete and the yellow vitta replaced by a few yellow dots. Length 0·25. On oaks. No. 678, male; 678 (bis) female.

CERESA. AMY. and SERV.

TWO-HORNED CERESA, *C. diceros*, (Say.) App. to Long's Exp., p. 299. Occurs like the following, on various trees and shrubs. No. 679, female.

BUFFALO CERESA, *C. bubalus*, (Fab.) Ent. Syst., iv. 14. No. 680, male; 681, female.

Var. *a.* Sides of the thorax mottled with fuscous. No. 682.

b. Under side black-brown. No. 683.

*TELAMONA.

(From *Telamones*, a synonym of Atlantes, in allusion to the enormous backs of these insects.) Humeral angles projecting, pointed and ear-like: dorsum compressed-foliaceous, the keel abruptly elevated at one or both its ends, forming a somewhat square crest or foliole: thorax nearly or quite reaching the tips of the elytra, with elevated longitudinal lines on each side: apical cellule triangular, its end rounded. The squarish dorsal crest forms a marked distinction between the genus here proposed, and that of Thelia, to which it is most nearly related.

ONE-COLORED TELAMONA, **T. unicolor*. Yellow, immaculate, apex of the thorax tinged with fuscous; summit and angles of the crest rounded. Length 0·45, height 0·25. No. 684, female.

BANDED TELAMONA, **T. fasciata*. Yellow; thorax anteriorly and at its apex, and an oblique band crossing the posterior part of the crest fuscous; head and anterior margin of the thorax yellow, with numerous black punctures and a black dot above each eye; crest longer at its base than above, anterior end more concave than the posterior, angles rounded. Length 0·38, height 0·20. Found on walnut trees. No. 685, female.

HOLLOW-CRESTED TELAMONA, **T. concava*. Brown; a large spot on each side and a transverse band behind the crest, yellow, with sinuous black margins, the spot traversed by an interrupted flexuous black line; summit of the crest slightly concave posteriorly, with a small yellow spot; crest contracted at its base before and more strongly behind, its posterior angle rectangular, its anterior rounded and more elevated. Length 0·42, height 0·22. No. 686, female.

Beech Telamona, **T. fagi*. Black, varied with obscure cinereous; anterior half of the crest double the height of the posterior half, and elevated from it perpendicularly. Length 0·40. Taken on beech trees. No. 687, male.

Woodbine Telamona, *T. ampelopsidis*, (Harris.) Inj. Ins. p. 180. On the woodbine. No. 688, female.

Sad Telemona, **T. tristis*. Fuscous mottled with pallid; crest with a white line on its posterior base and one or two small pellucid spots in its upper edge; three black dots over each eye; posterior angle of the crest nearly rectangular and almost as high as the anterior, the upper edge nearly straight. Length 0·35. Found on bushes of hazelnut, &c. No. 689, female.

Hazelnut Telamona, **T. coryli*. Pale dull yellow; an abbreviated band occupying the anterior end of the crest, a curved and fuscous-margined band crossing its posterior end, and the apex of the thorax, ferruginous; form of the crest similar to that of *tristis*. Length 0·32. Taken on hazelnut bushes. No. 690, female.

Oak Telamona, **T. querci*. Green, freckled with yellow, fading to dull yellow punctured with black; crest with a pale yellow vitta on its posterior edge; angles of the crest rounded, the anterior much higher than the posterior. Length 0·40. On different species of oak. No. 691, male; 692 female.

Reclivate Telamona, **T. reclivata*. Greenish white; a subinterrupted band crossing the back part of the crest, a stripe at its posterior base, and the apex of the thorax brownish black; anterior end of the crest strongly inclined backwards, rectilinear. Length 0·35. On oaks and chestnut. No. 693, female.

THELIA. AMY. and SERV.

TWO-SPOTTED THELIA, *T. bimaculata*, (Fab.) Entom. Syst. iv. 10. Occurs on the locust. No. 694, male.

SINGLE-STRIPED THELIA, *T. univittata*, (Harris.) Inj. Ins., p. 180. On oaks. No. 695, male; 696, female.

THORN-BUSH THELIA, **T. cratægi*. Fuscous varied with black and white; thorax with two broad white bands margined with black, the anterior narrowed on the front and notched on each side at the base of the foliole. Length, 0·34; height, 0·13; to the apex of the foliole 0·26. On the thorn. No. 697, female.

TRAGOPA. GERM.

DORSAL TRAGOPA, **T. dorsalis*. Greenish-white, polished; elytra hyaline; occiput, pectus, and large dorsal spot sending a branch towards each eye, black. Males black, with the face, apex of the thorax, the abdomen and feet greenish-white. Length, 0·20. On grape vines. No. 698, male; 699, female.

UROXIPHUS. AMY. and SERV.

WALNUT UROXIPHUS, *U. caryæ*. Dull brown; elytra towards the apex obscure-cinereous; abdomen and annulus on the tibiæ pale yellowish; sternum pruinose-white. Length, male, 0·30; female, 0·37. On the walnut and pig-nut. No. 700, male; 701, female.

Var. *a*. Femurs rufous, tibæ and base of the hind tarsi pale yellow. No. 702.

FAMILY CERCOPIDÆ.

APHROPHORA. GERM.

FOUR-SPOTTED APHROPHORA, *A. quadrinotata*, (Say.) Jour. Acad. Nat. Sci., vi. 304. Taken on grape vines. No. 703, male; 704, female.

Var. *a*. Elytra nearly hyaline. No. 705.

LEPYRONIA. Amy. and Serv.

Four-cornered Lepyronia, *L. quadrangularis*, (Say.) Jour. Acad. Nat. Sci., iv. 335. Common in autumn and spring in groves of the sugar-maple, where numbers may often be met with, drowned in the vessels of sap. No. 706, male; 707, female.

Parallel-marked Lepyronia, *L. parallella*, (Say.) App. to Long's Exp., p. 303. Common on the white pine. No. 708, male; 709, female.

Saratoga Lepyronia, **L. saratogensis*. Pale fulvous varied with white; anterior and posterior margins of the vertex parallel. Closely related to *parallella*, but that has the vertex crescentiform, is much darker colored, and is confluently nigro-punctate. Here the punctures are uncolored. Length, 0·40. Common on the pitch pines of Saratoga plains, and is sometimes met with on the white pine also. No. 710, male; 711, female.

Var. *a*. Dorsal vitta obsolete; elytra pellucid-white. No. 712.

CLASTOPTERA. Germ.

Obtuse Clastoptera, *C. obtusa*, (Say.) Jour. Acad. Nat. Sci., iv. 339. If this is not the *C. achatina*, Germ., that species is unknown to me. No. 713, male; 714, female.

Testaceous Clastoptera, **C. testacea*. Testaceous; scutel rufous; elytra with a polished callous-like black dot near the apex. Length, 0·20. Found on oaks and pines. No. 715, female.

Var. *a*. A black callous-like dot on each side of the pectus. No. 716.

b. Pectoral dots present, elytral dots wanting. No. 717.

c. The black dots wanting, both on the elytra and pectus. No. 718.

Pine Clastoptera, **C. pini*. Black; head yellow, with a black band on the anterior margin of the vertex; thorax with a yellow band anteriorly; elytra with a broad hyaline outer margin interrupted in the middle, and a black callous dot near the apex. Length, 0·14. Found chiefly on pines. No. 719, male.

Var. *a.* A ferruginous dot on the apex of the scutel. No. 720.

b. The yellow thoracic band widely interrupted. No. 721.

PROTEUS CLASTOPTERA, *C. *proteus.* Head bright yellow, a black band on the anterior margin of the vertex and a broader one on the front; front polished, without transverse striæ; a callous black dot near the apex of the elytra; legs yellowish-white, tarsi black. Length, 0·16; males slightly smaller. Abundant on the panicled dog-wood, (*Cornus paniculata.*) Closely allied to the *C. atra*, (Germar,) but on examining a host of specimens, not one occurs in which the legs are annulated with black or fuscous. No. 722, female.

This pretty insect, though so small in size, presents an astonishing number of sub-species and varieties, so clearly and distinctly marked that at first glance they would be confidently regarded as well characterized species. The following are the more prominent, though by no means all, of the varieties that occur:

Sub.sp. 1. *flavicollis.* Thorax entirely yellow.

Var. *a.* Elytra yellow. No. 723.

b. Elytra with an oblique blackish vitta. No. 724.

Sub-sp. *cincticollis.* Thorax with a black band.

Var. *a.* An interrupted black band on the anterior margin of the thorax. No. 725.

b. An entire black band on the anterior margin of the thorax. No. 726.

c. Thoracic band crossing the disk instead of the anterior margin. No. 727.

d. Band on the disk of the thorax, and scutel black. No. 728.

Sub-sp. *maculicollis.* Thorax with one or two discoidal spots.

Var. *a.* A black spot on the disk and interrupted band anteriorly. No. 729.

b. A black spot on the disk and anterior band entire. No. 730.

c. Two black spots on the disk of the thorax. No. 731.

Sub-sp. *nigricollis*. Thorax black, with a yellow band forward of the disk.

Var. *a*. The black band on the anterior margin of the thorax interrupted. No. 733.

b. The band continuous, No. 734.

c. Scutel black, with a yellow dot at its base. No. 735.

d. Scutel entirely black. No. 736.

FAMILY TETTIGONIIDÆ.

TETTIGONIA. Geoff.

Fork-striped Tettigonia, *T. bifida*, (Say.) Jour Acad. Nat. Sci., vi. 313. On grass in meadows. No. 737, male; 738, female.

Var. *a*. The usual three white dots in the black frontal spot confluent, forming a lunule. No. 739.

b. Two white dots only on the front. No. 740.

c. The orange color on the sides of the front replaced by black. No. 741.

Three-dotted Tettigonia, **T. tripunctata*. White; vertex with two black dots on the disk and a third on the apex; thorax with two pale brown bands; elytra pellucid-white, the longitudinal nervures brown, except at their tips; head longer and more pointed than in the preceding species. Length, 0·20. Taken on dog-wood. No. 742, male.

PROCONIA. Lepel. and Serv.

Four-striped Proconia, *P. quadrivittata*, (Say,) Jour. Acad. Nat. Sci., vi. 312. In having the vertex flattened, this and the succeeding species are widely separated from the two foregoing. Common, on various shrubs. No. 743, male; 744, female.

Var. *a.* Spots on the thorax sanguineous. No. 745.

b. Thorax with two black spots at its base. No. 746.

c. Thorax margined with black at its base. No. 747.

d. Disk and base of thorax green, immaculate. No. 748.

e. Thorax with a green mark shaped like a trident, based on its posterior margin. No. 749.

AULACIZES. AMY. and SERV.

TENDER-FOOTED AULACIZES, *A. mollipes*, (Say.) Jour. Acad. Nat. Sci., vi. 312. Common on the grass of meadows and pastures. No. 750, male; 751, female.

NEW-YORK AULACIZES, **A. noveboracensis.* Yellow; elytra and large spot at the base of the thorax, olive-green; no black vitta on the sides of the pectus; head shorter, broader, and its apex more obtuse, than in *mollipes.* Length, 0·33. Rare. On grass in meadows. No. 752, female.

*HELOCHARA.

(Gr. ἕλος, a marsh, χαιρω, to rejoice.) Head obtuse-triangular, broader than long, slightly broader than the thorax, the transversely-striated front reflected over on to the anterior sides of the vertex; vertex with a slight longitudinal stria; ocelli on the vertex, farther from each other than from the eyes; tips of the male antennæ knobbed; elytra with five terminal and three discoidal cells. By its knobbed antennæ, this genus occupies a similar rank in the sub-family *Tettigonides*, that Idiocerus does in that of *Jassides.*

COMMON HELOCHARA, **H. communis.* Dark green; females grass-green, when faded variously mottled with tawny yellow; beneath, more or less black, legs testaceous. Length, 0·20. On grass in marshy situations, often excessively numerous. No. 753, male; 754, female.

Var. *a.* The usual transverse row of large punctures on the foreside of the thorax obsolete. No. 755.

EVACANTHUS. Lepel. and Serv.

Orbital Evacanthus, **E. orbitalis*. Black, shining; orbital margins, antennæ and legs, tawny white; elytra deep fuscous, nerves and large spot at the apex of the outer margin white; face with a tawny white, transverse spot or band above. Length, 0.18, to tip of female abdomen 0·20. On dogwood, the last of July. Rare. No. 756, male.

GYPONA. Germ.

Yellow-striped Gypona, **G. flavilineata*. Pale green, immaculate; thorax with eight pale yellow vittæ, the middle ones common to the vertex and scutel. *Tettigonia 8-lineata*, var. *a*, of Say. Having never met with specimens possessing rosaceous stripes and nervures, and this insect being larger in size than the 8-*lineata*, I am induced to regard it as a distinct species. Length, 0·35 to 0·45. Common on oaks, maple, walnut, &c. No. 757, male; 758, female.

Red-mottled Gyponia, **G. scarlatina*. Dull yellowish brown; elytra with rosaceous nerves and dots; thorax without vittæ; common disk of the elytra sparsely dotted with black; length, 0·40. No. 759. female.

PENTHIMIA. Germ.

American Penthimia, **P. americana*. Black; elytra white towards the apex; two dots on the anterior edge of the vertex, and a spot on each outer angle of the thorax sanguineous or rufous. Female, with the vertex, thorax, scutel and venter, sanguineous. Closely allied to the European varieties *hemorrhoea* and *sanguinicollis*, (Fab.) but is a size larger. Length, 0·23. Rare. Taken on the sugar maple. No. 760, male; 761, female.

ACOCEPHALUS. Germ.

Yellow Acocephalus, **A. vitellinus*. Yellow; elytra longer than the abdomen, with pellucid spots, and on the margins towards the apex a few black dots. Length, 0·26. Found on the sugar maple. No. 762, male.

Var. *a.* Four faint tawny yellow vittæ on the thorax, and an oblique tawny band across the middle of the elytra. No. 763, female.

CŒLIDIA. GERM.

BANDED CŒLIDIA, *C. subbifasciata*, (Say.) Jour. Acad. Nat. Sci., vi. 310. Found on beech trees. I have also taken this species in Kentucky and Illinois. No. 764, female.

GARDEN CŒLIDIA, *C. olitoria.* (Say.) Jour. Acad. Nat. Sci., vi. 310. Taken on raspberry bushes. No. 765, female.

BYTHOSCOPUS. GERM.

BLACK-BACKED BYTHOSCOPUS, **B. tergatus.* Sordid green, immaculate; elytra smoky; tergum black; beneath greenish yellow; tarsi pale brown. Length, 0·30. On willows. No. 766, male.

ONE-COLORED BYTHOSCOPUS, **B. unicolor.* Greenish-yellow, immaculate; elytra hyaline; length, 0·28. Taken on flowers of goldenrod. No. 767, female.

HALF-CLOTHED BYTHOSCOPUS, *B. seminudus*, (Say.) Jour. Acad. Nat. Sci., vi. 307. Found on birch trees. No. 768, female.

SADDLED BYTHOSCOPUS, *B. clitellarius*, (Say.) Jour. Acad. Nat. Sci., vi. 309. On various herbs and shrubs. No. 769, male; 770, female.

PINE BYTHOSCOPUS, **B. strobi.* Yellowish-brown; elytra with three white bands, and closely inscribed with fuscous points and lines, outer margin with small fuscous spots; beneath brown; legs pallid, with spine-bearing black dots. Length, 0·20. Common on pines in May. No. 771, male; 772, female.

IDIOCERUS. LEWIS.

WEEPING IDIOCERUS, **I. lachrymalis.* Brown varied with white; elytra hyaline, immaculate, nerves fuscous; a black spot at the anterior edge of each eye; two remote black dots on the fore side of the vertex commonly connected by a transverse black line; scutel with a transverse black spot on the disk and two triangular ferruginous spots at the base. Length, 0·28. Taken on poplar and walnut trees. No. 773, male; 774, female.

Var. *a.* The black frontal line prolonged to the spots forward of the eyes. No. 775.

b. The usual small black spot beneath each ocellus wanting. No. 776.

c. The black frontal line wanting. No. 777.

d. One or two small four-sided discoidal cells in the elytra in addition to the usual number. No. 778.

ALTERNATE-MARKED IDIOCERUS, **I. alternatus.* Brown varied with white; elytra hyaline, immaculate, nerves fuscous with white alternations; two remote black dots on the anterior edge of the vertex; scutel with two dots on its disk and two triangular spots at its base black. Length, 0·22. Common, on willows. No. 779, male; 780, female.

SPOTTED-WINGED IDIOCERUS, **I. maculipennis.* Chestnut-brown varied with white; elytra hyaline, with a large fuscous spot on the middle and another at the apex of the outer margin, with an intervening white spot; a faint white spot towards the base of the sutural margin. Length, 0·25. Taken on thorn bushes. No. 781, female.

SUTURE-STRIPED IDIOCERUS, **I. suturalis.* Yellowish white; elytra hyaline with a dusky vitta on the suture, and two dusky spots on the base of the scutel. I have never met with the males of this and the following species, but their facial ocelli and elytral neuration indicate this to be their generic place. Length, 0·25. Taken on chestnut trees. No. 782, female.

PALE IDIOCERUS, **I. pallidus.* Greenish white, immaculate; elytra hyaline. Length, 0·22. On poplars and willows. No. 783, female.

PEDIOPSIS. BURM.

GREEN PEDIOPSIS, **P. viridis.* Light green, immaculate; elytra pellucid, almost hyaline. Length, 0·18. No. 784, female.

THREE-SPOTTED PEDIOPSIS, **P. trimaculatus*. Dull brown; scutel with a black spot at each angle, the posterior one sometimes obsolete; elytra with pellucid white spots situated one on the apex, one on the disk, and a third anteriorly, scutellar region obscure cinereous; face whitish. Length, 0·18. No. 785, female.

ATHYSANUS. BURM.

To this genus we refer those species which differ from *Macropsis* and *Pediopsis* in having the ocelli between the vertex and the face, and from *Jassus* in having the elytral suture straight.

VARIABLE ATHYSANUS, **A. variabilis*. Sulphur-yellow; elytra commonly with an oblique black vitta, their tips pellucid; vertex, thorax and scutel often fulvous or black. Length, 0·20. Abundant on birch trees, in June. No. 786, female.

Var. *a*. Dull yellowish-white throughout. No. 787.
b. Bright sulphur-yellow throughout. No. 788.
c. An oblique black stripe on each elytron. No. 789.
d. Vertex, thorax and scutel tawny yellow. No. 790.
e. Vertex and thorax tawny yellow, scutel black. No. 791.
f. Vertex, thorax and scutel black. No. 792.

SPRUCE-TREE ATHYSANUS, **A abietis*. Black, shining; head light yellow, mouth and two bands on the vertex confluent at their ends, black; middle of the sutural edge of the elytra with a white streak. Length, 0·20. Taken on the black spruce. No. 793, female.

WINDOWED ATHYSANUS, **A fenestratus*. Brownish-black; face and scutel rufous; elytra each with a pellucid spot near the apex, another on the disk, and a third opposite this last on the sutural margin. Length 0·20. On birch trees. No. 794, female.

SMALLER ATHYSANUS, **A. mincr*. Cinnamon-yellow; elytra with a discoidal and large apical spot hyaline. Length, 0·18. Common on birch trees. No. 795, female.

Beech-tree Athysanus, **A. fagi.* Elytra fuscous, immaculate; scutel, face and pectus black; venter and legs light yellow. Length, 0·18. Taken on beech trees. No. 796, female.

Black-nosed Athysanus, **A. nigrinasi.* Pale yellow, lower part of the face black or fuscous. Length, 0·18. Common, particularly upon the hornbeam, (*Carpinus americana.*) Presents many varieties. No. 797, female.

AMBLYCEPHALUS. Curtis.

Curtis's Amblycephalus, **A. curtisii.* Greenish yellow; two dots on the vertex, band on fore part of the thorax, and six vittæ on each elytron, black; beneath black. Length 0·15. Common particularly on the grass of meadows. No. 798, male; 799, female.

Say's Amblycephalus, **A. sayii.* Pale yellowish, without dots; elytral cells partially margined with fuscous or black, nerves white. Length 0·13. Abundant on grass in pastures and meadows. No. 800, male; 801, female.

Var. *a.* A black spot on the base of the thorax. No. 802.

b. Three black spots on the base of the thorax. No. 803.

c. Only the apical cells margined with fuscous at their tips. No. 804.

Melsheimer's Amblycephalus, **A. melsheimerii.* Pallid, base of the tergum black; elytra pellucid, nerves white. Length 0·10. Common on grass. No. 805, male; 806, female.

Inimical Amblycephalus, *A.? inimicus*, (Say.) Jour. Acad. Nat. Sci., vi. 305. Though this much resembles the species named *Sayii*, above, it differs from this genus by the length of its elytra, and from *Jassus* by its striated front and the number of its discoidal and apical cells. It probably forms the type of a separate genus. Common on grass, and its larva has been said to depredate upon the roots of young wheat. No. 807, male; 808, female.

Var. *a.* Nerves white, cells margined with fuscous. No. 809.

b. Two smaller dots between the ordinary ones on the head. No. 810.

c. Two dots only on the neck. No. 811.

d. Dots on the neck all wanting. No. 812.

JASSUS. FAB.

FRECKLED JASSUS, **J. irroratus*, (Say.) Jour. Acad. Nat. Sci., vi. 308. Common on herbage. No. 813, male; 814, female.

Var. *a.* A transverse row of five white dots on the anterior edge of the head. No. 815.

YELLOW-BACKED JASSUS, **J. fulvidorsum.* Head, thorax and scutel sordid yellow, uninscribed; elytra white, closely inscribed with fuscous lines and points, and on the outer margin irregular spots Length 0·25. On pines. No. 816, male; 817, female.

POINTED JASSUS, *J.? acutus*, (Say.) Jour. Acad. Nat. Sci., vi. 306. Found on hornbeam. No. 818, male.

* ERYTHRONEURA.

(Gr. ερυθρος, red, νευρον, nerve; in allusion to the color of portions of the elytral nerves in several of the species.) Head crescentiform, about as broad as the thorax; vertex rounded down to the front without an angular edge; ocelli between the vertex and the front, almost as near each other as to the eyes: elytra without closed cells in the disk; apical cells four, longish; middle apical nerve simple. Forward of the transverse nerve the exterior and middle nerves are sometimes obsolete. For a group of our small *Jassides*, whose elongated linear bodies give them the aspect of *Tettigoniides*, no place appears among the genera defined by Amyot and Serville. This and the following genus is therefore proposed for their reception.

WOUNDED ERYTHRONEURA, **E. vulnerata.* Fulvous-brown spotted and lined with whitish; elytra with an abbreviated yellowish-white vitta on the outer margin, interrupted near the middle by an oblique black line, and towards the apex by an oblique sanguineous one; tips dusky, with whitish nervures and spots; a whitish medial line common to the vertex, thorax and scutel; beneath black, legs pallid. Length 0·12, On raspberry bushes, grape vines and other situations where the foliage is dense, often in great numbers. No. 819, male; 820, female.

Grape-vine Erythroneura, *E. vitis*, (Harris.) Inj. Ins., p. 184. Inhabits with the preceding. No. 821, female.

Allied Erythroneura, **E. affinis*. Pale yellow; elytra hyaline, spotted with light yellow, with a black dot on the inner margin towards the apex, and a broad yellowish brown band on the base. Allied to *basillaris* Say, but readily distinguished, being destitute of sanguineous markings. Length 0·12. No. 822, female.

Three-banded Erythroneura, **E. tricincta*. Pale yellow, with three broad bands, the anterior velvet-black, occupying the thorax and basal half of the scutel; the middle bright ferruginous ending outwardly in black, forward of the middle of the elytra, the posterior dusky brown, on the apex. Length 0·12. No. 823, female.

Var. *a*. Anterior band sanguineous. No. 824.

Oblique-striped Erythroneura, *E. obliqua*, (Say.) Jour. Acad. Nat. Sci., iv. 342. No. 825, male.

Bean-vine Erythroneura, *E. fabæ*, (Harris.) Inj. Ins., p. 186. No. 826, male; 827, female.

* EMPOA.

(Gr. εν, upon, ποα, herbage.) Differs from Erythroneura in having the apical nerve widely forked, forming a triangular apical cell, which is shorter than the three other terminal cells.

Oak Empoa, *E. querci*. White; elytra pellucid, with three blackish dots in a transverse row behind the middle. Length 0·12. On oaks, sometimes excessively numerous. No. 828, female.

Scarlet Empoa, *E. coccinea*. Scarlet-red, immaculate, pectus and venter orange, elytra brownish-pellucid. Length 0·10. Taken on pines. No. 829, male.

FAMILY PSYLLIDÆ.

PSYLLA. GEOF.

THREE-DOTTED PSYLLA, **P. tripunctata.* Wax-yellow, dorsum black; legs and antennæ pale yellow, the latter black at the tips; elytra hyaline, nerves brown, beyond the furcation widely margined with smoky-fulvous, a blackish dot on the middle of the terminal margin of each of the inner apical cells. Length 0·16. No. 830, female.

FOUR-LINED PYSLLA, **P. quadrilineata.* Bright fulvous; elytra hyaline, nerves blackish; four whitish longitudinal lines on the middle of the metathorax; abdomen black with a yellow band at its base. Length 0·12. No. 831, female.

HORNBEAM PSYLLA, **P. carpini.* Light-green or greenish yellow; elytra hyaline, nerves light green. Length 0·16. Common on the hornbeam, in July. No. 832, male; 833, female.

ANNULATED PSYLLA, **P. annulata.* Straw yellow; legs white; elytra hyaline, nerves straw yellow; antennæ black, basal half straw-yellow annulated with black. Length 0·15. Occurs on the sugar-maple. No. 834, male; 835, female.

LIVIA. LAT.

VERNAL LIVIA, **L. vernalis.* Bright ferruginous; pectus and tips of antennæ black; legs ferruginous-pallid. Length 0·15. Found in spring in vessels of sap of the sugar-maple. No. 836, male; 837, female.

BLACK-LEGGED LIVIA, **L. femoralis.* Bright ferruginous; pectus, four forward femurs and tips of the antennæ black. Perhaps not distinct from the preceding. Length, 0·15. Taken on a pine tree, in July. No. 838, female.

FAMILY APHIDÆ.

APHIS. Linn.

Apple-tree Aphis, *A. mali*, (Fab.) Ent. Syst. iv. 216. Common on the under side of the leaves and tips of the young branches of the apple-tree. No. 839, male.

Cherry-tree Aphis, *A. cerasi*, (Fab.) Ent. Syst. iv. 211. Common on the under side of the leaves of the garden cherry, (*Cerasus vulgaris*, Mill.) No. 840, male.

Cherry-inhabiting Aphis, **A. cerasicolens.* Palegreenish yellow; antennæ and legs black, base of the femurs pallid; nerves of the fore wings dusky, stigma pellucid white; abdominal horns quite short. When irritated, the legs and antennæ instantly emit from their pores a bluish white cotton-like substance, which remains adhering to them, resembling fine mould. Length 0·20 to the tips of the wings. On the common black-cherry-tree, (*Cerasus serotina*, DC.) No. 841, male.

Berberry Aphis, **A. berberidis.* Black; pectus and abdomen pale yellow, tip black; legs dusky; larva and pupa pale, with a green or black vitta on each side of the back, parallel with the outer margin. Length, 0·10. On the under side of berberry leaves. No. 842, male; 843, female.

Cabbage Aphis, *A. brassicæ*, (Linn.) Syst. Nat. ii. 734. Common on the under side of cabbage leaves. No. 844, male.

Silk-weed Aphis, **A. asclepiadis.* Black; abdomen pale green; sides with two rows of impressed fuscous dots, three in the lower, larger, five in the upper; abdominal horns nearly equalling the tip; stigma smoky-whitish; nerves brown; the costal whitish. Length 0·15. On the lower surface of young leaves of the common silk-weed. No. 845, male.

Dogwood-leaf Aphis, **A. cornifoliæ.* Apterous females black, subpruinose, obovate; legs pale yellow, feet black; antennæ pale yellow, tips black; horns nearly equalling the truncated tip of the abdomen. Length, 0·05, to tip of abdomen. On the under surface of the leaves of *Cornus paniculata.* No. 846, female.

THORN-LEAF APHIS, **A. cratægifoliæ.* Black; abdomen green, with a row of blackish dots along each side; nerves of the fore wings whitish, black at their tips; tibiæ, except at their tips, and base of the femurs, green; horns nearly half equalling the tip of the abdomen. Length, 0·15. On the leaves of *Cratægus punctata*, corrugating them. No. 847, male.

BIRCH-INHABITING APHIS, **A. betulæcolens.* Sulphur-yellow; antennæ deep black, two basal joints sulphur-yellow, the following joints white at their bases; stigma pellucid yellowish; nerves black, the costal and marginal sulphur-yellow, base of the forked nerve hyaline; horns very short. Length, 0·18. No. 848, male.

MAPLE-TREE APHIS, *A. aceris*, (Linn.) Syst. Nat. ii. 736. Our insect appears to correspond with the brief description given of this species. Occurs on the *Acer pennsylvanicum.* No. 849, male.

ELDER-LEAF APHIS, **A. sambucifoliæ.* Black; tibæ and base of the femurs pallid; stigma dusky; nerves black, the furcate one hyaline at its base. Length, 0·15. On the under side of the leaves of the elder. No. 850, male.

PINE-INHABITING APHIS, **A. pinicolens.* Straw-yellow, densely pruinose; antennæ black, bases pallid, with a fuscous annulus; fore wings with a fuscous spot on the apex of each nerve; nerves brown, hyaline at their bases, the costal straw-yellow; horns very short. Length, 0·25. Solitary on the pine. No. 851, male.

POPLAR-LEAF APHIS, **A. populifoliæ.* Chestnut-brown, pruinose; legs hairy, black, above the knees pale brown; stigma smoky fulvous, margined with black; nerves brown; tergum with two dorsal rows of impressed, quadrate, fuscous spots, and on each side two rows of impressed dots; horns equalling a third of the distance to the tip. Length, 0·22. On the leaves of the *Populus grandidentata.* No. 852, male.

CONE-FLOWER APHIS, **A. rudbeckiæ.* Red; antennæ and legs black, basal half of the femurs pale yellow; horns equalling the tip; stigma yellowish; nerves brown, the costal sulphur-yellow; Length, 0·20. Infests the upper part of the stalks of *Rudbeckia laciniata*, *Solidago serotina* and *S. gigantea.* No. 853, male.

LACHNUS. Illig.

Spruce-tree Lachnus, **L. abietis.* Apterous females pubescent, broad oval, blackish clouded with lurid brown, with a faint cinereous dorsal vitta; venter lurid, pruinose, with a black spot near the tip; antennæ sordid-white, with a black annulus at the apex of each joint. Length 0·15 to tip of the abdomen. Occurs on the *Abies nigra.* No. 854, female.

Oak-leaf Lachnus, **L. quercifoliæ.* Light yellow; antennæ pellucid white, with a slender black annulus at the tip of each joint; fore wings with a blackish spot on the apex of each nerve and a deep black dot on the base of the curved apical nerve; stigma whitish. Length to tip of wings 0·15. On the leaves of the white oak. No. 855, male.

Willow Lachnus, **L. salicellis.* Black; tibiæ and base of the antennæ obscure pallid; base and costal margin of the fore wings yellowish-white. Length 0·08. On the young succulent twigs of willow trees. No. 856, male.

Alder-leaf Lachnus, **L. alnifoliæ.* Apple-green; antennæ greenish-white, with four black annuli; legs greenish-white, tarsi, knees, and line on the posterior side of the tibiæ black; wings hyaline, the three oblique nerves black. Length, 0·10. On alder leaves. No. 857, male.

Elm Lachnus, *L. ulmi*, (Linn.) Syst. Nat. ii. 733. Solitary, on the under side of elm leaves. No. 858, male.

Poplar Lachnus, *L. populi*, (Linn.) Syst. Nat. ii. 736. On the under side of the young leaves of *Populus grandidentata.* No. 859, male; 860, larva.

ERIOSOMA. Leach.

Apple-tree Blight, *E. lanigera*, (Hausman.) Illiger's Magaz. vol. i. p. 440. *Myzoxylus mali*, (Blot.) Mem. Soc. Agricult. de Caen, 1830, p. 38. On the bark of young branches of the apple, to which tree, in Europe, it has been a great pest. Commonly only solitary individuals are here found, and in but one instance, have I met with it clustered and covering a limb as described by foreign writers. No. 861, male.

APPLE-ROOT BLIGHT, **E. pyri*. Black, more or less pruinose, with a tuft of cotton-like down on the tergum and commonly a smaller one on the head; fore wings hyaline, with a large black stigma and nerves,' the externo-medial nerve hyaline towards its base; inner edge black from the base to the apex of the first nerve, hyaline beyond. Length, 0·20. Common on the wing in groves, in autumn. On the roots of a young apple tree brought me from a nursery, excrescences were observed, the crevices in which were found to be covered with small lice-like larvæ, among which some winged individuals occurred, which proved on examination to be this species, from which circumstance its habits are inferred and its name bestowed. No. 862, male.

ALDER BLIGHT, **E. tessellata*. Dull bluish-black; tergum with the segments marked by strongly impressed lines and covered by white down in square checker-like spots. Length, 0·16. On the under side of branches of the alder, (*Alnus rubra*, Marsh.) crowded together and concealed beneath a dense covering of snow-white down. I have searched in vain for winged individuals of this species. No. 863.

BEECH-TREE BLIGHT, *E. imbricator*. Black; three last segments of the abdomen blue-pruinose; stigma brown; longitudinal nerve and a line on the middle of the inner margin black. Female (?) winged; abdomen fulvous, with a black spot on the disk; legs pallid. Larva pallid, with 2 fuscous dorsal stripes; posterior half of the abdomen covered with a tuft of cotton-like down, from which proceeds two longer and coarser filaments. Length, 0·22. On the under sides of the branches of the beech tree, covered with snow-white down. On the slightest jar of the branch, a shower of tiny drops of a water-like fluid falls from these insects. Having met with no description of the *E. fagi*, (Linn.,) or its habits, I am unable to ascertain whether that insect is dissimilar to ours. No. 864, male; 865, female (?); 866, larva.

Pine-tree Blight, **E. strobi.* Black, pubescent, subpruinose; a dorsal row of white meal-like spots on the tergum; fore wings with the costal margin, the apical and two inner basal nerves, black. Length, 0·20. Common on branches of the white pine, giving to the bark of infested trees a peculiar black appearance. Belongs to a nondescript genus, intermediate between this and Lachnus. No. 867, male; 868, female.

BRYSOCRYPTA. Halliday,

Witch-hazel Brysocrypta, **B. hamamelidis.* Males black, pruinose; wings hyaline; nerves brown; legs whitish; knees and tarsi black. Larva smaller, brown. Length, 0·09. Inhabits conical follicles on the upper surface of witch-hazel leaves; each follicle contains about a dozen individuals, and has a small orifice in the under surface of the leaf. No. 869, male; 870, larva; 871, its follicle.

FAMILY COCCIDÆ.

Our species of this family have not as yet been investigated in their living state. The dried shield-like bodies of the dead females have been met with on several of our indigenous trees. In addition to the species so abundant upon the apple-tree, and currently regarded as the *Coccus arborum-linearis* of Geoffroy, (specimen No. 872,) the following may serve as New-York examples of this family: The Willow Coccus, **C. salicis*, is ferruginous with obsolete black spots, has an oval nearly hemispheric form, and measures 0·20 in length, (No. 873.) The Linden Coccus, **C. tiliæ*, the largest of our species that have been observed, is ferruginous, hemispheric, and measures 0·24, (No. 874.) Both these species have the usual slit at the posterior end, and are wrinkled transversely.

(D.)

BOTANY.

From Prof. James Hall.

Dirca palustris. Leather Wood. Specimens of the wood and bark.

From Thomas Rich, of the schooner Commodore.

Artocarpus incisa, (Bread fruit.) A specimen of the shell of the bread fruit. From the West Indies.

From Benj. Mix, of Albany.

Bovista craniiformis, (D. Schweintz.) Cranium-shaped puff-ball, fifteen inches in diameter. From Saratoga county.

From Dr. Charles Martin, U. S. Navy.

A nut used by the Indians for burning, for the purpose of coloring the India rubber. From the Amazon river.

A nutmeg inclosed within the inner husk or mace. From Martinique.

Two nuts, unknown.

(E.)

LIST

OF

MINERALS, GEOLOGICAL SPECIMENS AND FOSSILS.

ADDED TO THE

State Cabinet of Natural History,

FROM JANUARY 1, 1850, TO JANUARY 1, 1851,

MINERALS.

DONATIONS.

From Milton Sheldon, of Ellenville, Ulster county.

Four specimens of sulphuret of iron, from the Shawangunk mountain, near Ellenville.

From Theodore Teed, of Croton, Westchester county.

A large specimen of tourmaline, (Schorl.) From Croton.

A bar of iron, made from ore found at Anthony's Nose.

From John Fitch, Esq., of Troy, Rensselaer county.

A specimen of calcareous spar, taken from the tunnel of the Albany and Stockbridge railroad, near Canaan, Columbia county.

From Francis Saltus, Esq., of the city of New-York.

A specimen of graphite, from his lands in Essex county, N. Y.

From Arnold Wood, of New Scotland, Albany county.

A specimen of bog iron ore, colored by manganese, from the town of New Scotland.

From Oscar Weil, of Albany.

Stellate crystals of sulphuret of iron, on green jaspery slate.

From Theodore Teed, of Cortlandtown, Westchester county.

Specimens of Peroxide of iron, (*Limonite*) from Cortdlantown, Westchester county.

From ALFRED O. CURRIER of Troy.

PSEUDOMORPHOUS CRYSTALS of Specular Iron, imbedded in quartzose rock, from Chittenden, Vermont.

From Mrs. JANE VAN VECHTEN.

GALENA, from Illinois.

From ALMERIN MARKS, Esq., of Durham, Greene Co.

COPPER PYRITES. Two specimens; from Bristol, Connecticut.

GALENA, from Illinois.

SULPHURET OF IRON, from Lockport.

GREEN CARBONATE OF COPPER. Two specimens.

DOG-TOOTH SPAR. Two specimens, from Lockport.

From N. T. RAYNSFORD and ADIN W. DAINS, of Albany.

IRON ORE. From Fort Henry, Essex county.

From Doct. CHARLES MARTIN, of the United States Navy.

CARBONATE OF COPPER. From the mines of St Jago De Cuba.

YELLOW AND VITREOUS SULPHURETS OF COPPER. Five specimens. From the mines of St. Jago De Cuba.

NATIVE COPPER. Two specimens. From the mines of St. Jago De Cuba.

SULPHURET OF IRON AND COPPER. From the mines of St. Jago De Cuba.

QUARTZ containing crystals of Sulphuret of Iron. From the mines of St. Jago De Cuba.

QUARTZ PEBBLE.

From Prof. JAMES HALL, of Albany.

RED OXIDE OF ZINC, WITH FRANKLINITE. From Franklin, N. Jersey. Four specimens.

MASSIVE FRANKLINITE. From Franklin, N. Jersey.

FRANKLINITE, CRYSTALIZED. From Franklin, N. Jersey.

FRANKLINITE AND CARBONATE OF LIME. From Franklin, N. Jersey.

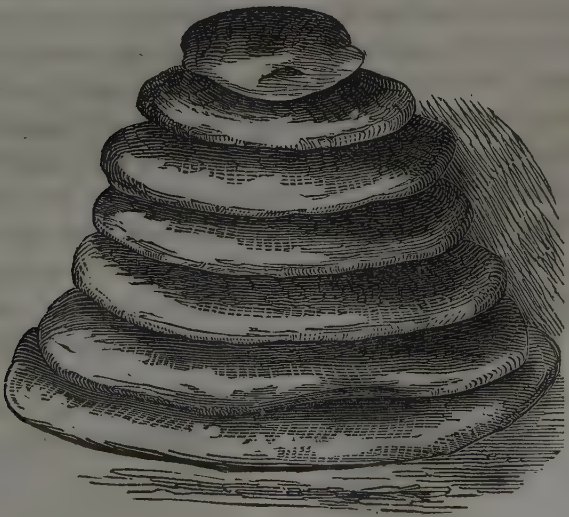
JEFFERSONITE. From Franklin, N. Jersey.

From William H. Grant, of Barrytown, New-York.

Seven Lenticular concretions. From the black shale of the Hudson River group, quarried out in making excavations for the track of the Hudson river railroad, about four miles north of Stuyvesant Landing, Columbia county

These concretions are flattened, and were found piled upon each other horizontally, the larger one occupying the base and the smaller one the apex, thus forming a regular tapering upright cone. The diameter of the largest concretion is one foot, and of the smallest six inches; and the aggregate height of all is eleven inches. A vertical nucleus appears to pass through the centre of the mass, around which the flattened spheroids were formed. The law of segregation, or rather molecular attraction, will explain and account for the formation of the several concretions; but the general principle or law, which governed the whole mass, and produced symmetry of form and harmony of arrangement, is not fully understood, and is worthy of consideration.

The appearance of the spheroids as they were found imbedded in the shale, will be more fully comprehended from the following drawing:



The following communication of Mr. Grant describes the locality, &c., where the concretions were obtained:

"The concretions I forwarded a few days since, for the State Geological Cabinet, were found in the rock excavations for the Hudson River Railroad, about four miles north of Stuyvesant (Kinderhook) landing. They were imbedded in the rock (the common black shale of the Hudson river group) from twelve to eighteen feet below the surface, on the face of a ledge, and were loosened and partly removed by a blast. The rock at this locality has the usual dip to the east of 45° or more, but that immediately surrounding the concretions is characterized by the warped and tortuous and rather loose stratifications frequently seen where a vertical surface for any distance is exposed. It is also rather moist, and fifteen or twenty yards distant so wet as to be difficult of blasting.

I was not present when these specimens were first exposed; but, on careful inquiry, find that the foreman and laborers at work on the spot, concur in saying that they were in a horizontal position, resting on each other, the largest at the bottom, and tapering upward in the conical form in which they were packed when sent to the Geological rooms. Whether these constitute the whole of the series, or whether they belong to the same series or not, I am unable to say, as there were several others, numbering in all perhaps 25 or 30, thrown out at the same time by blasts that were, unfortunately, broken, and many of the fragments lost. Whatever may have been the number in the series, from the best evidence I have, they were placed independent of the stratifications of the rock, the layers nearly or quite horizontal, and diminishing symmetrically in size from the base to the top. The broken pieces that I have obtained, and one specimen entire, present a more symmetrical appearance than those which I have sent, and the stem-like formation in the centre which apparently connected them together, is more clearly marked.

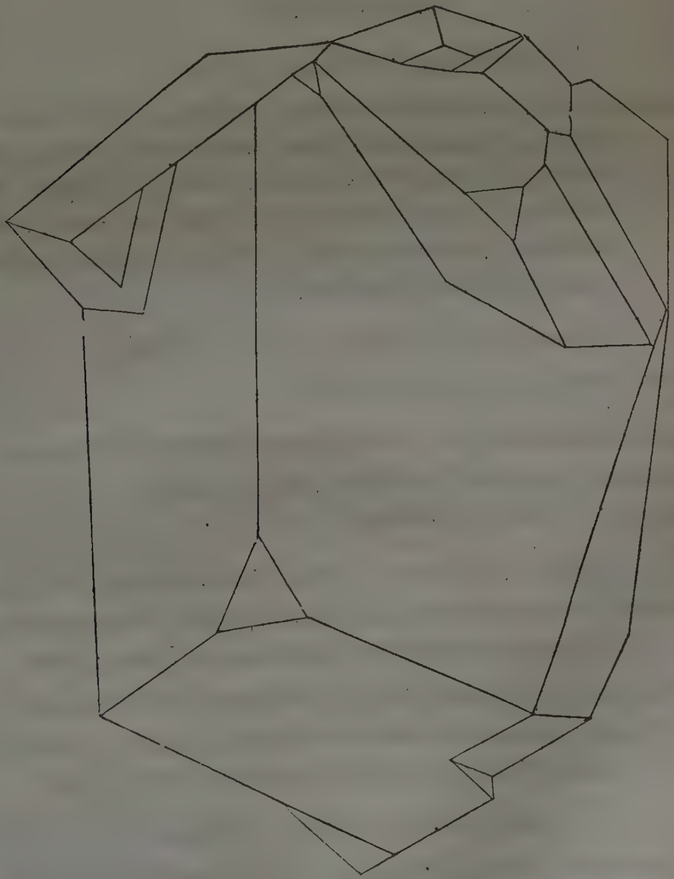
As these are the first concretions of the kind that I have discovered in the course of several years experience in the excavation of work of a similar description, I have deemed them of sufficent interest, though not much versed in the subject, to present them to the State Cabinet of Natural History.

WILLIAM H. GRANT.

From SULLIVAN BOULTON, Esq., of Church's Mills, St. Lawrence County.

A CRYSTAL OF CALCAREOUS SPAR, from Governeur, St. Lawrence county.

This crystal is more than a foot in diameter, and weighs seventy-five pounds.



GEOLOGICAL,

INCLUDING FOSSILS.

DONATIONS.

From Henry Rousseau, of Troy.

Hypersthene, with imperfect Garnets. Broken from a boulder of 1,000 lbs. lying in the Water Works' creek in the north part of the city of Troy, on the side hill, nearly one mile east of the Hudson river. Rock in place, in the north part of Lewis county, 200 miles northwest from where the boulder was found.

From Philip W. Groot, Esq., of Albany.

Foster's geological chart and key.

From Theodore Teed, of Cortlandtown, Westchester county.

A specimen of granite, from Cortlandtown; also,
A specimen of gneiss, (polished.)

From J. A. Hurst, of Utica, Oneida county.

A piece of "table rock," from Niagara Falls; broken off from that portion which fell in the month of June, 1850.

From Almerin Marks, Esq., of Durham, Greene county.

Several rock specimens from the Hamilton group, containing petrifactions of Delthyris mucronata, atrypa, &c.

From John Fitch, Esq., of Troy.

Two specimens of limestone, from John I. Budd's quarry, Schodack, Rensselaer county.

From Prof. JAMES HALL, of Albany.

Cast of a portion of the lower jaw of PALÆOTHERIUM.

The original was found in the tertiary formation of the valley of the Upper Missouri.

By Purchase.

HOMALONOTUS DELPHINOCEPHALUS, (Hall.) Fossil from the Niagara Group, Lockport.

LIST

OF

MINERALOGICAL AND GEOLOGICAL SPECIMENS,

RECEIVED FROM

FRANKLIN B. HOUGH, A. M., M. D.

OF SOMERVILLE, ST. LAWRENCE COUNTY, N. Y.

The following is Dr. HOUGH's description of the specimens:

Nos. 1 to 20. CALCAREOUS SPAR. Found associated with Pearl Spar at a new locality on the banks of the Oswegatchie river, near the village of Church's Mills, Rossie, St. Lawrence county.

Several interesting crystalline forms have been observed here, some of which are believed to be new, or at least not hitherto found in this State.

The accompanying figures represent several modifications.

Fig. 1.

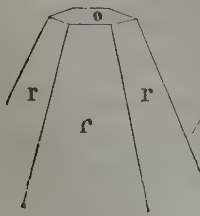


Fig. 2.

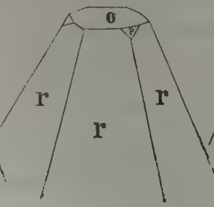


Fig. 3.

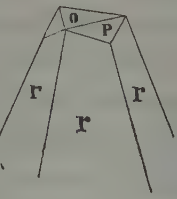
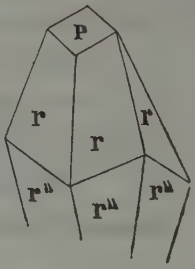


Fig. 4.



Figs. 1, 2, 3, represent modifications of the pyramid of the scalene dodecahedron, in which the summit is replaced by a single hexagonal plane, perpendicular to the axis of the crystal. In fig. 2, every alternate solid angle at the summit, is replaced by a plane with cleavage parallel to its surface, and therefore a part of the primary rhombahedron. In fig. 3, these planes are enlarged so as to reduce the terminal plane to a triangle, and in fig. 4, this plane is entirely destroyed, and the crystal presents the usual form of the *binaire*, of Haüy, or a scalene dodecahedron with a summit of three rhomboidal faces. The measurement of these planes are calculated as follows: O. on R., 113° 17′; O on P., 142° 14′; as derived from the measure of the angles P. on R., and R. on R., as given in the State report on mineralogy, page 219. All of these forms occur in the specimens transmitted to the State collection. It is very probable that actual measurement might give different angles from those calculated above.

Fig. 5.

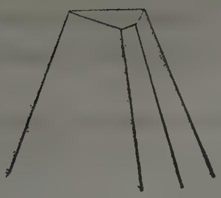


Fig. 6.

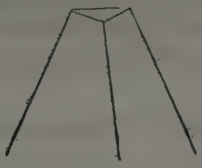
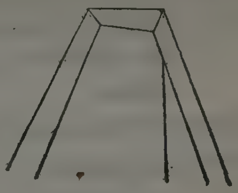


Fig. 7.



Figs. 5, 6,7, represent modifications observed in the pyramid, by the extension of some of the planes, and the extinction of others.

Fig. 8, represents a common form at the locality. The reëntrant planes indicate its compound character. When but partly developed, it presents in certain positions the appearance of a low four sided pyramid. In some instances the pyramid is modified by six additional planes which make the summit a little more obtuse, as is represented in fig. 9.

Fig. 8.

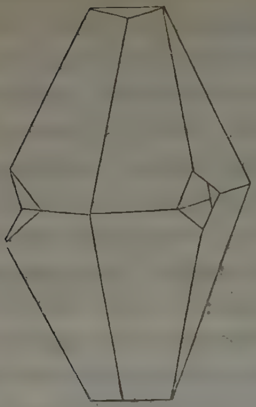
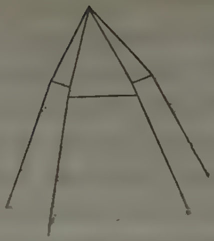


Fig. 9.



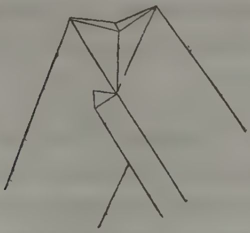
21. Calcareous spar. Governeur, St. Lawrence county.

It occurs imbedded in clay, and is very compact. One crystal from this locality was more than a foot in diameter, and weighed seventy-five pounds. This has been presented to the State Cabinet by Sullivan Boulton, Esq., the finder.

22, 23. Fossils of the chazy limestone. Found in a boulder. The parent rock of this mass cannot be less than 70 miles distant.

24 to 29. Calcareous spar. Vrooman's Lake, Antwerp, Jefferson county.

Fig. 10.



The crystalline forms observed at this locality are intermediate between the primary rhombahedron, and the hexahedral prism with low, three-sided pyramids as terminations. Great similarity exists among the crystals of this locality, and the accompanying sketch, fig. 10, represents a very prevalent compound form.

30. Potsdam sandstone, with lines apparently of stratification, crossing it in two directions.

31. Spinelle. This mineral occurs in Rossie, near Somerville, associated with chondrodite, graphite, &c., in white limestone.

32, 33, 34, 35. Chondrodite. Locality of preceding.

This mineral, hitherto rare in northern New-York, was found in great quantity in the spring of 1850, in white limestone, with its usual associates of spinelle and small quantities of graphite.

It is disseminated throughout a ledge of white limestone, and exists in great abundance. The locality is three-fourths of a mile W. N. W. of Somerville village, on the land of Mr. Alfred Day. The mineral occurs of various shades of yellow and orange, sometimes inclining to red. The spinelle is of a dull reddish tinge, and in small crystals translucent. The largest crystals observed (¾ of an inch on a side) were opake, but the faces of the crystals are usually smooth and bright.

The singular association of these minerals has been observed in Orange county, and other sections of the Union. This is the first abundant locality observed in St. Lawrence county. See State Mineralogy, page 282.

36 to 39. Pearl spar. Associated with calcareous spar, (No. 1–20.) Rossie.

40, 41. Sphene. Found in a hornblende boulder, associated with crystals of the latter minerals. Rossie, St. Lawrence county.

42. Crystalized cast iron. From the furnace of Messrs. Skinner and Blish, Church's Mills. Rossie.

This most interesting specimen, with three or four others, was produced in the fall of 1849, by the concurrence of numerous circumstances which seldom coincide. Having shown this formation to numerous practical founders and iron manufacturers, and to several distinguished chemists, none of whom had ever seen anything like it before, I am inclined to believe the specimen to be *unique.*

It formed on the inside of a cavity made by the escape of liquid iron, as the "pig bed" was broken up, soon after casting from the furnace.

The ore was derived in part from the Sterling iron mine in Jefferson county, which ore has for one of its associates the sulphuret of nickel. Fragments of the carbonate of iron, specular ore, and the other minerals from this locality afford traces of *nickel* when carefully tested, and it may be probable that cast iron made from this ore is in reality an alloy of nickel and iron. A partial examination was made of this ore, and the iron from it by Mr. S. W. Johnson, in the laboratory of Yale College. A thorough analysis will be made at a future time.

It is well known that those meteoric masses of native iron which have been examined chemically, have nearly uniformly been found to contain nickel; sometimes it is as high as twelve per cent, and that they possess a remarkable crystalline structure.

I have been able to find but two authentic analyses of metallic ærolites which did not possess a crystalline structure.

The crystalline structure in these specimens is seldom apparent externally, but becomes so by polishing and etching with acids.

The crystalline forms presented in the cast iron, are the tetrahedron and octahedron with their surfaces and their edges bristling with points, which, when examined by a lens, appear to be themselves fringed with smaller and more delicate needles, at right angles with the axis to which they are attached, and gradually diminishing in length as they approach its point.

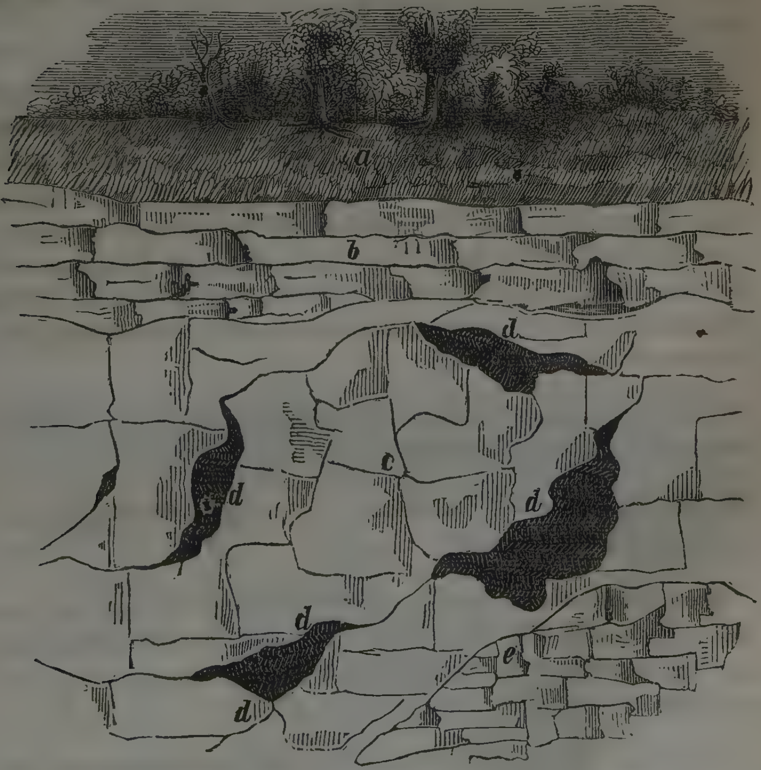
43. CRYSTALIZED SPECULAR IRON, from the farm of Joel Smith, Governeur, St. Lawrence county.

Mining operations have been commenced at this locality, and one or two tons of the ore have been raised. The rock in which it occurs (primary limestone) has never in this section of the

State proved a valuable repository for metals, and the workings will doubtless be shortly abandoned. The ore is associated with *quartz*, (No. 44,) *carbonate of lime* in crystals and incrustations upon other minerals, (No. 45) and a *reddish brown calcareous spar*, (No. 46) which presents curved and broken surfaces on cleavage.

The white limestone which furnishes this ore, is *overlaid* at this locality with Potsdam sandstone, thus furnishing one instance in addition to the many I have observed in this vicinity, proving at least the *relative age* of the two formations, although it affords no criterion by which to decide the disputed question of their *origin*.

As the relation of the rocks and the ore is somewhat interesting, I insert a figure to represent them.



REFERENCES.

a. Soil. *b*. Potsdam sandstone.
c. White limestone.

d. Iron ore deposited in strings and masses through the rock.
e. Red and coarsely crystalline limestone.

47. SPECULAR IRON ORE, of a soft sectile texture, like red chalk, from the farm of James Morse, Governeur, St. Lawrence county.

This place has also been recently wrought for iron ore, and several tons of a quality like this, and No. 48, (more silicious and gritty) have been procured. It is in and under Potsdam sandstone, and appears to exist abundantly. The sandstone of this vicinity is in many places highly colored with iron, which renders it harder and less liable to decay upon exposure. The surfaces of the rock appear every where studded with projecting masses of this ferruginous mixture. No. 49 represents one of these masses.

In the immediate vicinity of this locality, and in the same field, is a deposite of SCALY IRON FROTH, (No. 50.) of an extremely unctuous character, and dark red color. It possesses but slight cohesive properties, and has been used with great advantage in diminishing the friction of wagon wheels and heavy machinery. It may be used successfully in sharpening razors, polishing cutlery, imparting a metallic coat for electrotype purposes, and for all other uses to which plumbago is applied, except where the color would be an objection.

It occurs in white limestone and apparently in large quantities, associated with the following:

51, 52. SULPHATE OF BARYTES. Of a highly crystalline and cleavable variety.

The color is snow white when not stained by the iron; in some cases it is nearly transparent, and in others it is filled with angular cavities from the high crystalline development which it exhibits.

The edges of the plates which form the cavities do not often present crystalline planes, yet several have been observed which besides the more common forms represent the modifications represented in the following figures: (11, and 12.)

Fig. 11.

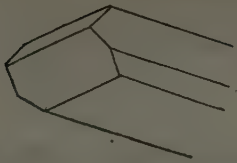
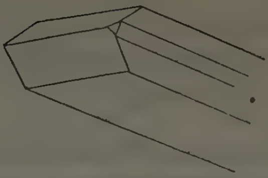


Fig. 12.

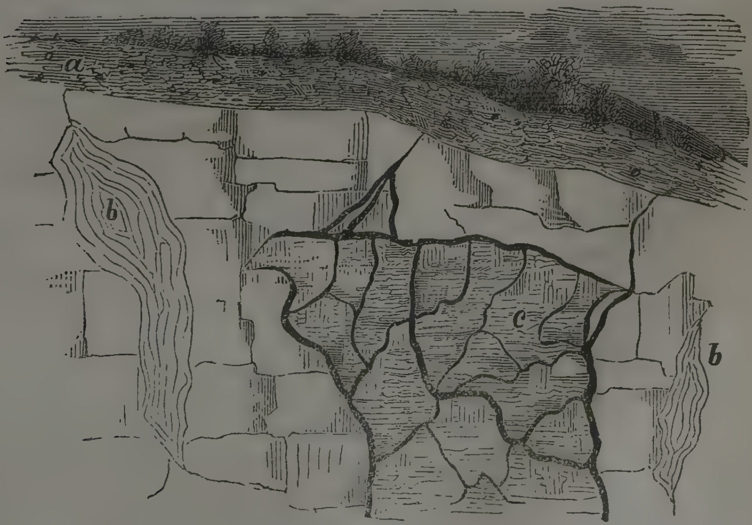


The surface often presents a columnar appearance, as is represented in specimen, No. 53.

Besides this mineral, there is found with the micaceous ore, a hard silicious mineral, of dark color, and conchoidal fracture, (No. 54,) a porous and stratified variety of the same, (No. 55,) and a white spongy mass (No. 56,) apparently the heavy spar partially decomposed by exposure to the weather.

57. Dark green serpentine. Associated with the rock in the vicinity of the above locality.

The iron froth and the heavy spar of the locality above described, appear to occupy separate veins, which vary constantly in width, and change in character within short distances. Their relation is shown in the following section:



REFERENCES.

a. Soil.
b. Sulphate of Barytes.
c. Iron foam.

The evidences of igneous agency at this locality are decided, as the limestone near the ore appears to have been calcined and partially vitrified by heat.

(F.)

ADDITIONS

TO THE

HISTORICAL AND ANTIQUARIAN COLLECTION,

IN THE

STATE CABINET OF NATURAL HISTORY,

(BY DONATION AND PURCHASE,)

From January 1, 1850, to January 1, 1851.

DONATIONS.

From the Hon. Asa Wilcox, of Danube, Herkimer co.

Stone chisel.

From L. R. Hough, of Martinsburgh.

Stone chisel, made of greenstone.
Large spear head, made of chert.

From S. A. Dewey, of Martinsburgh.

Fragments of ancient pottery.
Four chert arrow heads.

From Peter B. Noxon, M. D., of Watervliet.

Stone pestle, used in pounding maize. Found in the town of Niskauna, Schenectady county.

From Thaddeus Cheesebro, of Guilderland, Albany co.

Two chert and one white quartz arrow heads. Found in the town of Guilderland, Albany county.

From S. W. Root, of Cooperstown, Otsego county.

A chert arrow head. Found in digging a cellar on the shore of Otsego lake.

From Theodore Teed, of Croton, Westchester county.

Indian arrow head. Found in Croton, Westchester county.
Three fragments of Indian pottery. Found in Croton.

From Henry B. Northup, of Sandy Hill, Washington co.

A very singular specimen of Indian workmanship, made of novaculite. Found in the town of Hartford, Washington county.

From JAMES MEADS, of Albany.

A copper Mexican GRAPE-SHOT. From the battlefield of Buena Vista.

A mass of SPARABLES, cemented together by heat. From the great fire in the city of Albany, on the 17th day of August, 1848.

A mass of TACKS, cemented together by heat. From the great fire in the city of Albany, on the 17th day of August, 1848.

From LEMUEL STEELE, of Albany.

TACKS, cemented together. From the great fire in the city of Albany, on the 17th day of August, 1848.

From ROBERT REID, of the Island of St. Lucia, West Indies.

A specimen of COCOA-NUT WOOD, (turned.) From the Island of St. Lucia, West Indies.

From Miss CAROLINE LOVETT, of Albany.

An antique LOOKING GLASS, set in a frame of sandal wood.

From the Rev. MILES BRONSON, of Assam, in India; Missionary from the American Bap. Missionary Union.

A SILVER COIN, "one rupee," (value 48 cts.) Issued by the East India Company, 1840.

A COPPER COIN, "one quarter anna," (value $\frac{1}{48}$ of a rupee.) Issued by the East India Company.

A native East Indian COPPER COIN.

From RICHARD H. PEASE, of Albany.

Gä-o-wo gus-nuh. Bark Canoe. A model.
Gä-gä-we-sä. Paddle. 4 specimens.
Ya-yeh-gwä-dä-quä. Segar case.
Ya-yud-dos-hă-quä. Card receiver. 2 specimens.
Gä-gwih-sak-tah Yä-dä-gwah. Watch case.

From the Rev. A. HEMENWAY, Missionary at Bangkok, the capitol of Siam.

A SILVER COIN, (Fuang,) 7½ cents. From Siam, in India.

From Hiram H. Cooper, of Camden, Oneida county.

A Silver coin. Date 1652, on one side "New England," on the reverse, "Massachusetts;" commonly called *Pine-tree shilling.*

From Mrs. M. Elizabeth Baldwin, of Saratoga county.

A Belt interwoven with beads, and a game-bag. These articles were taken from a vault in Peru, South America, in the year 1830. They had been deposited with the remains of an Indian Chief, a hundred years previous.

A Bill of the continental currency, for sixty dollars, issued according to a resolution passed by Congress at Philadelphia, Sept. 26, 1778.

A Bill of the Virginia currency, for seven hundred and fifty dollars, issued according to an act of the Assembly, passed March 1, 1781.

From Theodore Teed, of Cortlandtown, Westchester Co.

A large stone axe.

A stone chisel, made of greenstone.

An unfinished chert Arrow-head

A stone pestle, made of sandstone.

A fragment of an Indian bowl, made of steatite, (soapstone.)

These articles were found in Cortlandtown, Westchester Co.

From Asa Fitch, M. D., of Salem, Washington county.

Relics of the battle at Wallomsac, N. Y., commonly called "Bennington battle." Within the fortification thrown up by Col. Baum, a single oak tree was left standing. The piece of wood presented to the State Cabinet, is from the decaying stump of that tree. Sunk in it is a box containing a bullet, found about forty rods north from the tree, in the direction whence, Gen. Stark, it is said, made his attack. The bullet is from N. Burnet, Esq., proprietor of the grounds, who picked it up when plowing, about ten years ago. Vestiges of this battle, formerly found in abundance, are now exceedingly rare, and all traces of the breastworks, &c., are entirely obliterated.

From AARON VAN ALLEN, of Stuyvesant, Columbia county.

Eleven chert ARROW HEADS, found in Stuyvesant.

From Mrs. S. M. LANSING MERCHANT, of Albany.

A CANNON BALL, found near the junction of the Battenkill with the Hudson river, on the farm where Burgoyne erected a breastwork, &c., during the revolutionary war.

From A. MARKS, Esq., of Durham, Greene county.

Several chert ARROW HEADS; also fragments of human BONES and INDIAN POTTERY, obtained by Mr. Marks from an ancient Indian burying ground on the banks of Connecticut river.

From CHESTER C. MOORE, of Albany.

1. A MEDICINE POUCH, manufactured of Deer skin and beautifully ornamented with Porcupine quills, made by the Black-feet Indians of Oregon.
2. A string of STONE BEADS, obtained from the Black-feet Indians of Oregon, and supposed to have been obtained by them from the Russian traders.
3. A flint ARROW HEAD, found in the Black-feet country, near the Rocky Mountains, where a battle had been fought between the Black-feet and Crow tribes of Indians.

From Doct. CHAS. MARTIN, of the United States' Navy.

1. A MACE OR WAND, made from the feathers of the Macaw or Toucan, carried in the hand by the chiefs of the Cannibal Indians of the Amazon river, 80 or 90 miles above Para, a city of Brazil.
2. A TUBE OR SHEATH made of woven strips of bark or reed, capable of enlargement and contraction. Used for the purpose of expressing the liquid from the arrow root in its preparation for use. From the Amazon river, 80 or 90 miles above Para, a city of Brazil.
3. Two EARTHERN PIPES, of different style, with a wooden ornamental stem. From the Amazon river, 80 or 90 miles above Para, a city of Brazil.
4. GOURD. From the city of Isabel, Guatemala, painted in imitation of the ruins in that country.

From John Gebhard, Esq., of Schoharie.

No.

1. Egyptian image, ten inches in length, made of the native Sycamore wood, in the form of a mummy case; painted and covered with hieroglyphics. Images of this description are frequently found in mummy cases, and appear to be a representation, on a small scale, of the mummy itself. It is probable that they were used as a kind of household gods by the ancient Egyptians, and in that character interred with the possessor on his decease.

2. Etruscan figure, representing Pallas. This figure is made of baked clay, and placed upon a marble pedestal. Heighth, eight inches.

3. Bronze bust of the Princess Lucille. Heighth, three inches above the pedestal.

4. Bronze figure of a Consul in his toga. Heighth, five inches above the pedestal.

5. Roman figure in bronze. Heighth, four inches.

6. Bronze figure of a cow. Heighth, two inches above the pedestal.

7, 7. Two bronze figures of soothsayers or oracles. Heighth, four inches above the pedestals.

8, 8. Two bronze figures of Egyptian priests. Heighth, four inches above the pedestals.

9. Bronze figure of the Egyptian Venus. Heighth, four inches above the pedestal.

10, 10, 10. Three varieties of funeral lamps. These lamps are made of baked clay, and are of ancient Egyptian manufacture.

There is no description accompanying these interesting ancient relics, but they are evidently of Egyptian and Roman origin, and were probably used as household gods.

By purchase.

Gä-yä-ah.	Work-bag. Two specimens.
Da-ya-he-gwă-hus-tä.	Hat-band of broaches.
An-yus-gă.	Silver Broach. (Large variety.)
An-yus-gă.	Silver Broach. (Smaller variety.)

AN INDIAN PIPE. Manufactured from the *steatitic pyroxene* of Prof. Lewis C. Beck. Found near Fort George, Warren county.

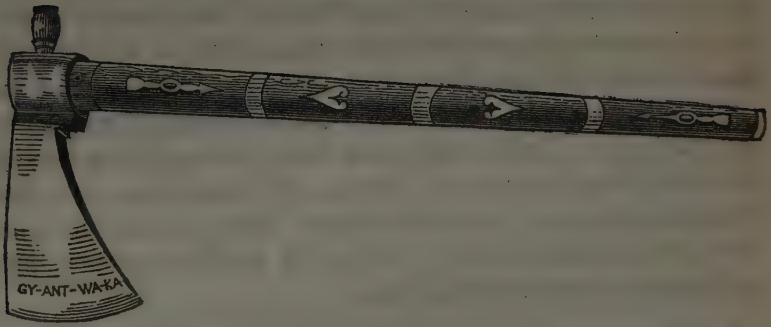
This relic presents the best specimen of Indian design and sculpture ever found in this State. It is three inches in height, and represents an Indian in a sitting posture, with his arms resting upon his knees. The back, constitutes the bowl of the pipe, at the lower extremity of which there is a hole for the insertion of a stem.

AN INDIAN RELIC, plowed up at the depth of a foot beneath the surface of the soil, in the town of Commerce, Oakland county, Michigan, in the year 1848.

This relic is made of *novaculite*, and in the form of an axe with two edges, with a hole in the centre for the insertion of a handle.

TOMAHAWK, which formerly belonged to the celebrated Indian Chief, CORNPLANTER.

(G.)



THE CORNPLANTER TOMAHAWK,

IN THE STATE COLLECTION.

To the Regents of the University:

As the history of Cornplanter is already well known, it is unnecessary for me to relate any of the incidents of his life, except as they may be connected with the tomahawk.

Cornplanter was a Seneca by birth, and resided, after the American Revolution, upon a reserve in Pennsylvania, granted to him by the general government, in consideration, it is said, of his valuable services as a peace-maker between the Indian nations generally, and the people of the United States. During the Revolution, and for a long time subsequent, he enjoyed the rights and exercised the duties of a chief of the Seneca nation, and was for a long time known by the name of Gy-ant-wa-ka, or the Cornplanter, as the name literally signifies. He cultivated a large tract of land and became a considerable farmer, for which reason the name was bestowed upon him by the Senecas.

As a warrior, Cornplanter was daring and courageous, but not rash or impetuous. As a counsellor he was fearless and uncompromising in the advocacy of his views, yet his fearlessness and sternness were always tempered with discretion and prudence.

About the year 1810, Cornplanter, who was a firm believer in the Indian doctrines respecting the communication of men with the spirits of the other world, had a dream. His dream, as tradition preserves it, was, that he had had a sufficient time of service for the nation; that he was now grown too old to be of further use, either as a warrior or as a counsellor, and that he must therefore appoint a successor; and, further, that in order to preserve the continued good will of the Great Spirit, he must remove from his house all vestiges or relics of the workmanship and invention of white men. In obedience to this dream, Cornplanter took the many presents which had been bestowed upon him by Presidents Washington and Adams, and burnt them up. His presents consisted of the full uniform of an American officer, including an elegant sword, a number of medals, together with some other evidences of friendship.

It is customary among the Iroquois, when any one has had a dream, to announce the fact, and to request that some one might guess it. When the dream is guessed, then an interpretation is requested. This custom of guessing dreams is usually practised at their annual or New-Year's festivals. This course was adopted by Cornplanter in relation to the dream above adverted to. He wandered naked for three days from house to house, to find some one competent to guess his dream. Upon the third day having entered a house and announced the fact that he had had a dream, he expressed a desire that some one might guess it. The man of the house (John Crouse, a Seneca,) said that he would relate his dream, which he did, the substance of which is given above. Crouse seeing him naked and shivering with cold, said, " You shall henceforth be called O-no-no," (meaning cold.) This signified that his name and title of chief as Gy-ant-wa-ka, had passed away. Cornplanter acknowledged that it was truly and correctly guessed.

In obedience to his dream, Cornplanter immediately designated his successor. He chose an old and intimate friend, O-ya-wah-teh, (small berry,) known under the English name of Canada.

At that time Canada was a resident of the Tonawanda reservation, and Cornplanter communicated to him his determination of making him his successor by sending, as an evidence of his selection and determination, the *tomahawk* now in the State collection, with a belt of wampum, as a token of his sincerity. By the belt and wampum as evidences of his right, Cornplanter requested that he might be installed as a chief under the name and title of Gy-ant-wa-ka. O-ya-weh-teh was, accordingly, raised up and installed as the successor of Cornplanter. He received the name of Gy-ant-wa-ka, and retained it until his death, which happened about the year 1835. Cornplanter, from his resignation until his death in 1836, was known under the name of O-no-no.

Upon the death of Canada, his effects were distributed according to the Indian custom, and his widow retained this tomahawk to keep as a family relic. She kept it until obtained from her by me. At the time I purchased it, she informed me that the wampum which was sent with the tomahawk by Cornplanter, had all been used for other purposes, and no part of it could then be had. The tomahawk, when received from Cornplanter, had in it a different handle from the present. She described it as being of better workmanship, with numerous silver ornaments upon each side. Upon one side was engraved the name Gy-ant-wa-ka; and upon the reverse the name of John Andrus, who was doubtless the manufacturer.

Although Cornplanter designated his successor, who was actually installed, and acted as a chief, Cornplanter was never in fact deposed. He ever had the privilege of sitting with the chiefs in council, and had a voice in their deliberations.

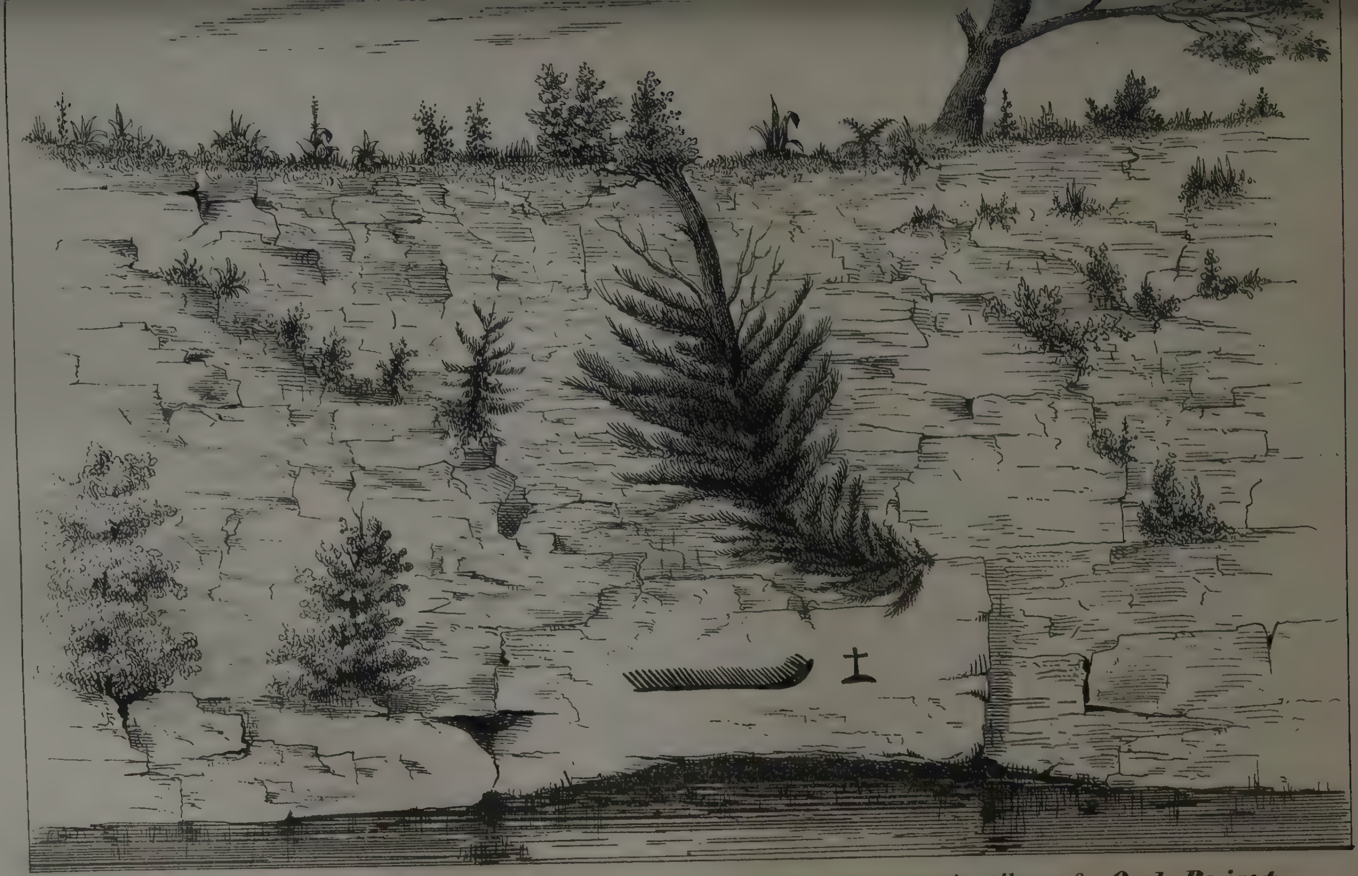
He continued to live upon his reserve, and died at an advanced age in 1836. His reservation was known and is yet distinguished by the name of Deo-no-sä-da-geh, signifying the "Burnt House."

All which is respectfully submitted.

Hä-sa-no-an-da.
ELY S. PARKER.

Rochester, June 29th, 1850.

Note.—It was contrary to the custom of the Iroquois for a chief to resign his office and appoint his successor. But in this instance, out of reverence for his dream, a departure from their ancient customs was permitted. E. S. P.



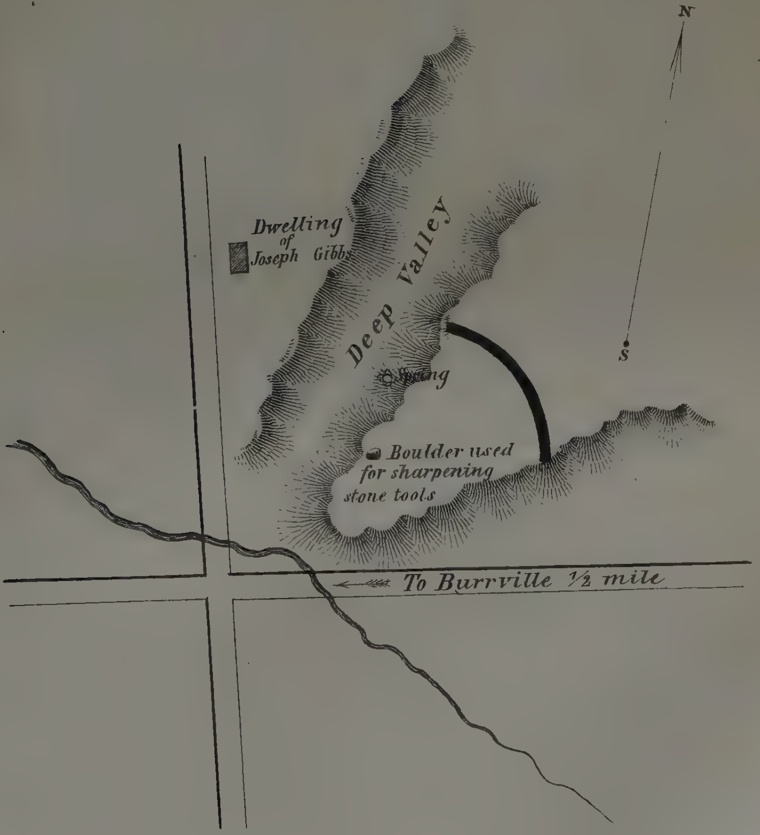
INDIAN PAINTING *on the shore of the* *St. Lawrence* *opposite the village of* **Oak Point.**
Accompanying the paper on Indian antiquities by **F.B. HOUGH.**

Nº 6

PLAN
OF AN ANCIENT WORK OF ART

in Watertown Jefferson Co.
near the residence of Joseph Gibbs
Visited June 1850
by
F. B. HOUGH

Lith. of R.H. Pease Albany N.Y.



No 7

PLAN

OF AN ANCIENT WORK IN WATERTOWN N.Y.

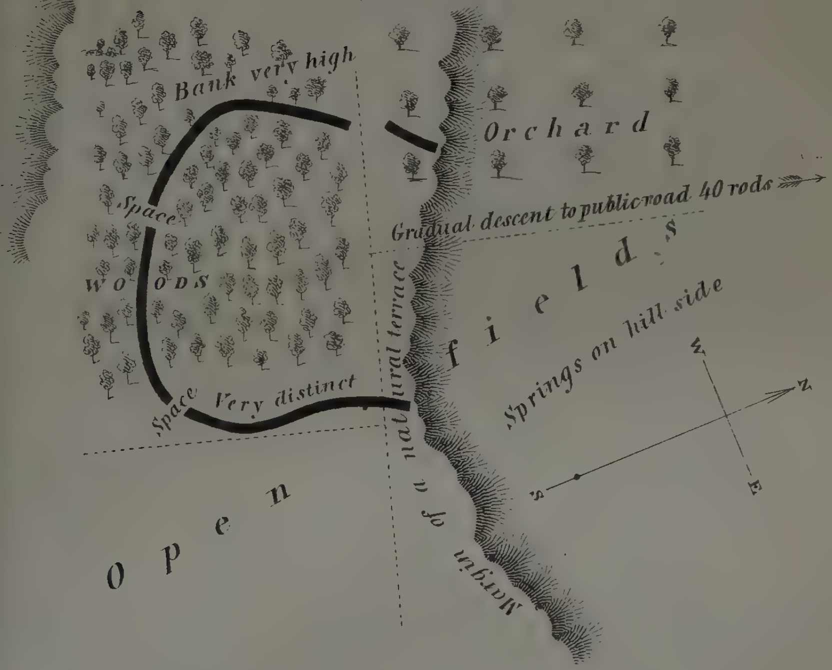
On the farm of Asa Goodenough

Surveyed by F.B.Hough

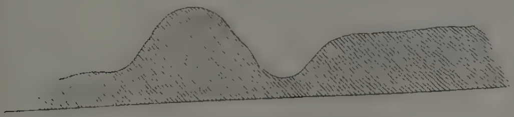
July 1850.

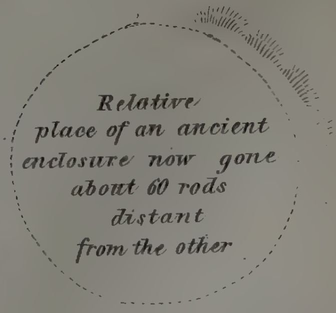
Scale 8 Rods to the Inch.

Lith. of R.H.Pease Albany N.Y.



Section of the bank and external ditch in this work




Relative place of an ancient enclosure now gone about 60 rods distant from the other

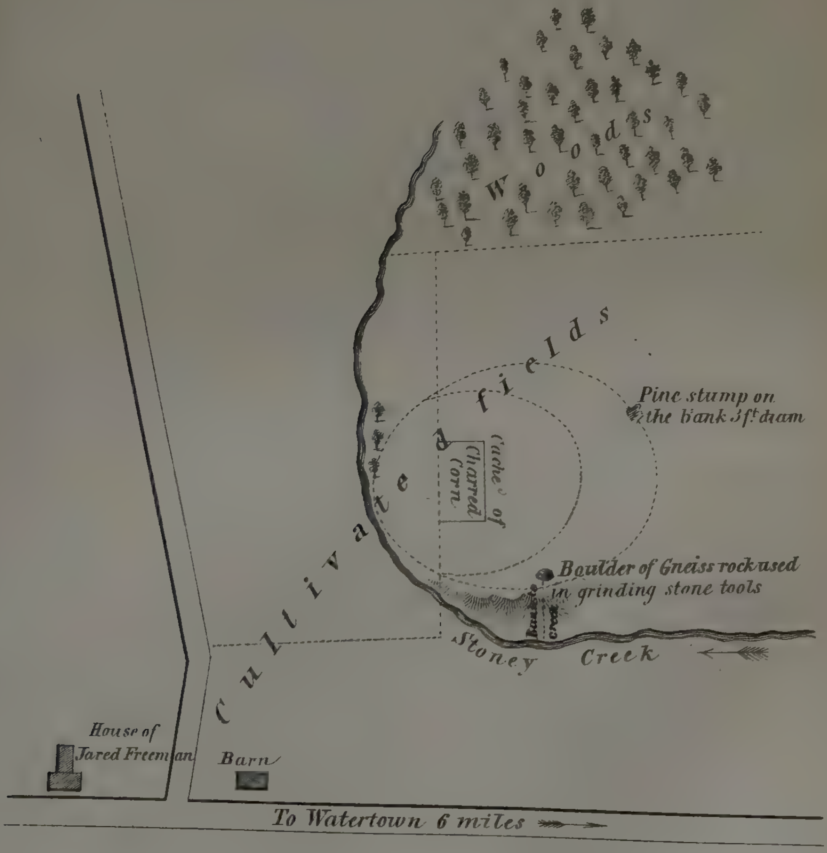
Nº 8

TRACE OF AN ANCIENT WORK

On lot no. 2 in the town of Rodman Jeff. Co.
near the residence of Jared Freeman

Visited and Surveyed
JUNE 1850
BY FRANKLIN B. HOUGH M.D.

Lith. of R. H. Pease, Albany N.Y.



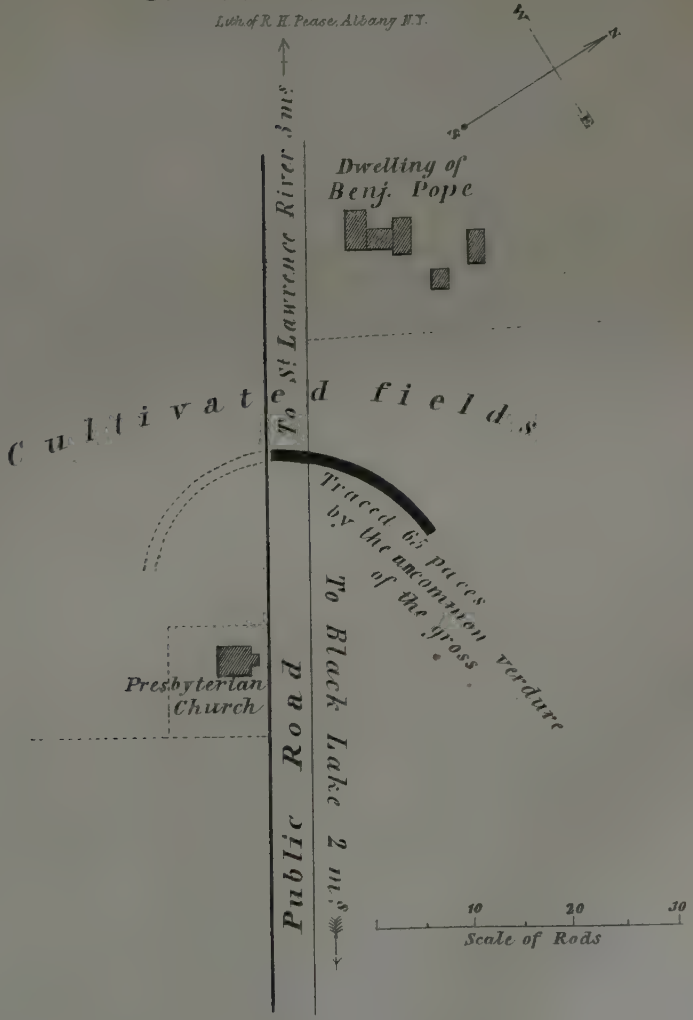
Nº 9

PLAN
OF AN ANCIENT TRENCH ENCLOSURE

in the town of Oswegatchie St. Lawrence Co.
On the farm of Benj. Pope
Visited and Surveyed
June 1850

BY FRANKLIN B HOUGH M D

Lith. of R. H. Pease, Albany N.Y.



(H.)

NOTICES OF ANCIENT REMAINS OF ART,

IN JEFFERSON AND ST. LAWRENCE COUNTIES

BY FRANKLIN B. HOUGH, M. D.,

OF SOMERVILLE, ST. LAWRENCE COUNTY.

In addition to the remains of ancient works in the town of Leray, Jefferson county, described in the last annual report of the Regents, on the condition of the State Cabinet, page 101, the writer has been able to ascertain the existence of one or two others in that town, but now so obliterated that no trace remains The principal of these was about five miles from the village of Watertown, near the red tavern, on the plank road to Evans' mills. It was situated on the margin of a small stream, a branch of West creek, (the same whose source is marked on plan No. 2, of my article of last year,) and in a level sandy plain at the western extremity of the *pine plains*, a strongly marked feature of this section of the country.

Nothing can be gathered concerning it, except that it was a nearly circular enclosure, and consisted of a low mound or ridge of earth, with gateways or intervals along its course at irregular distances. Some of the largest pine trees of the forest grew upon and within the bank. The neighboring fields formerly yielded the usual variety of fragments of pottery, and rude implements of bone, steatite and flint.

The present highway to Antwerp passes across the eastern margin of this enclosure, and the area is mostly occupied by houses and gardens. This work is in the immediate vicinity of the post-office, named Sanford's corners.

Remains of ancient art have been observed in three different localities in the town of Watertown, Jefferson county, all of which are situated on the brows of hills, or on elevated grounds above the level of the lake ridges. One of these is on the land of Wm. Lampson, near the residence of Joseph Gibbs, half a mile east of Burrville, and about a quarter of a mile from the town line of Rutland, on lot No. 31, of the township survey. It consisted of a crescent, running across an elevated ridge, the steep banks of which completed the enclosure, and would have rendered it a very suitable position for defence. No graves were found within or around it, and there is much reason to believe that it was a military work, belonging to a period long subsequent to that of many others in this section of the State. On the hill side is a spring of water, and within the enclosure is a large boulder of gneiss, which has been worn smooth and concave in places, by the rubbing of stone implements. On a point of land across the deep valley on the west, and directly opposite, I picked up a cast iron ball, weighing eight ounces. Several of these have at various times been found by the inhabitants, and this leads to the conjecture that they may have a connection with the history of the work.

With the exception of iron balls I have been unable to learn the existence of other metallic articles from this locality, although fragments and implements of aboriginal workmanship have been abundant. No trace of the original mound is now left, and the accompanying sketch, (No. 6,) was drawn under the direction of one of the early settlers who was familiar with it when the country was first cleared.

This site being on the line between Montreal and Onondaga, may we not reasonably conclude that this may have been a camp or station of the French, at the period when they occupied trading and missionary posts among the Iroquois, two centuries ago,

This inquiry can never be answered, and we are left to supply the history with such feeble assistance as may be drawn from a few scattered memorials.

On lot No. 29, in the town of Watertown, there formerly existed two trench enclosures. One of these was on the farm of

Anson Hungerford Esq., and is now entirely obliterated by the cultivation of nearly fifty years. Its place and relative position is represented in outline, on sketch No. 7, which accompanies this paper.

It is said to have resembled the work near it, had gateways or intervals along its course at irregular distances, and was surrounded by a ditch so deep that a team could not be driven across it without great difficulty.

A short distance from this, on the same range and lot, and on premises now owned by Asa Goodenough, is another trench still in perfect preservation, and by far the most distinct of any I have seen in northern New-York.

This locality is three miles south-east of Watertown village, on the summit of a gradually sloping natural terrace of Trenton limestone, in the edge of an open wood, and commands an extensive and pleasant prospect.

Elms three feet in diameter are found growing upon the bank, while within the enclosure are found the decaying remains of oak and other trees still larger.

In one place, on the south-western side, the bank is about six feet above the bottom of the ditch. A section of the bank, and plan of this work (No. 7) accompany this description.

In the north-western corner of the town of Rodman, Jefferson county, there formerly existed a remarkable enclosure, which by long cultivation has been obliterated. An outline of the work, as near as can now be known, together with a description, was furnished me by Mr. Jared Freeman, the owner of the land, who was familiar with its appearance when every part was entire. It occurs on lot No. 2, in a gently sloping field, near one of the small sources of Stony creek, and consisted of a double bank, with an intervening crescent-shaped space, and a short bank running down to the stream, which may have been the remains of a dam or a covered way to the water. Beaver dams are common on the stream, but this has not the appearance usually seen in them. Within the inner enclosure there was plowed up a large quantity of corn, over an area of about one rod by eight. This was charred either by fire, or long exposure to the action of the elements, and must have been an immense grainery, or a *cache*; or hiding place for grain. It is estimated that there must have been several hundred bushels that were plowed out.

Charred corn was found nowhere else except at this particular spot, although the adjacent fields have furnished an unusual abundance of stone and earthen-ware fragments.

Just within the enclosure is a large boulder of gneiss rock of very hard texture, in which are seen two or three broad, shallow depressions, doubtless worn by the grinding of stone implements.

These smooth depressions were twelve inches across, and from one to two deep. No other part of the mass presents a smooth surface. Directly upon the mound there still stands a pine stump, which, although partly decayed, still has a diameter of five and a half feet, at a height of three feet from the ground. An outline of this work is represented in plan No. 8.

In the vicinity of Perch lake, in the town of Pamelia, Jefferson county, near the mouth of a small stream known as Lowel creek, and on an estate commonly called the "Lafarge place," there formerly existed a number of earthen mounds, probably burial places, all of which, except one, have been levelled by cultivation.

The original number or exact locality of these barrows or tumuli, cannot now be ascertained. They may have numbered half a dozen, and were considered as objects of curiosity by the early settlers. The one now remaining stands on an elevated bank that gradually descends with an intervening plain to the lake shore, and commands a pleasant prospect. It is in the immediate vicinity of the mansion (now in ruins) built by Mr. Lafarge, the former proprietor of large tracts of land in the vicinity. It has a diameter of about thirty feet, a present elevation of three feet, with a depression in the centre, and is circular in form.

The relics formerly found in the adjacent fields indicate tha this was anciently a favorite haunt of the aborigines. So far as the writer could learn, no excavations have ever been made at this place to ascertain the existence of relics or bones in the mound.

A semicircular trench formerly existed in the town of Oswegatchie, St. Lawrence county, on lot No. 40, (western subdivision,) on the farm now owned by Benjamin Pope. A small portion in the present highway is the only part now visible, but on the first settlement of the country a complete semicircle could be very plainly traced. Within the bank was a ditch two feet deep. No bones have been found here, although an unusual abundance of earthen-ware fragments formerly occurred here.

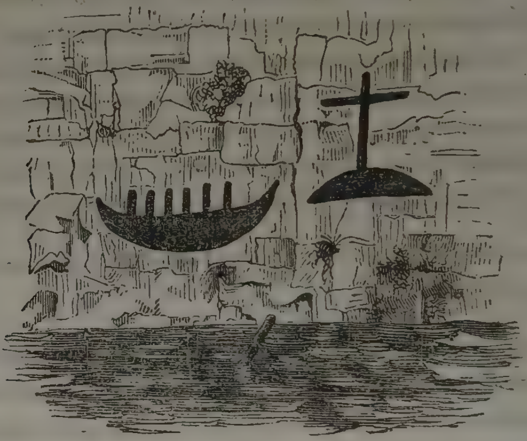
Stone implements and flint arrows, also were frequently found in and around the work.

In this instance we observe a departure from the plan observed in most other works in this section of the State, in which a complete enclosure was formed, either by an artificial mound of earth, or in part by some natural barrier, as a stream, or the brow of a hill. In the present example none such existed, and the work consisted simply of an open crescent. A sketch of this work is represented in plan No. 9. Several other works remain to be described, particularly in Jefferson county, but the foregoing is all that the writer has been able to examine during the past year.

Connected with our primitive history, and forming a link in the chain of events that preceded our existence as a State government, are several specimens of rude painting upon the rocks on the Canadian shore of the St. Lawrence river, which although not within our territory, yet may belong to our history, and are here inserted.

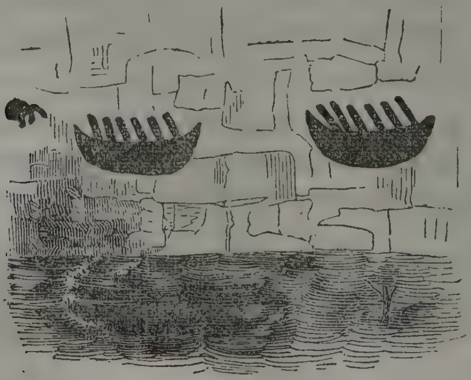
They may hereafter be found to confirm or illustrate some recorded incident, and are examples of the symbolical records employed to preserve the memory of events.

Directly opposite to the village of Morristown, and a little below Brockville, are two localities where paintings may be seen, They appear to have been executed in red ochre; are about three feet above the average surface of the river in summer, and traced in the rudest manner upon the vertical face of the cliff. They are some fifty rods apart. The lower one represents a canoe with six individuals, and a cross as represented in the following sketch:



Every part is still very distinct. The cross is about twelve inches high, and the whole is drawn in that proportion. It evidently was the work of converted Indians, and cannot date back further than the period of the Jesuit missions in the seventeenth century.

Above this, and nearer the town of Brockville, are painted two canoes, each with six persons. The boats are about ten inches long, and have the relative size and distance represented in the following figure:



The left hand figure is blurred, and represents besides the boat an object that could not be determined. It is much like that in the figure.

More interesting than these, is a painting done apparently in vermilion, in Elizabeth township, C. W., about one fourth of a mile above the village of Oak Point, in Hammond, St. Lawrence county. It represents a batteau, or canoe, with thirty-five persons, and a cross. The cross is about one foot high, and the boat four feet long. The lines representing men (?) are strokes half an inch wide, and ten inches long, and it is like those above described, about three feet above the water's edge. A sketch of this, with the associated scenery accompanies this paper.

(I.)

ANALYSIS OF A SPECIMEN OF HEMATITIC IRON ORE.

BY J. H. SALISBURY, M. D.,
Chemist to the New-York State Agricultural Society.

Old State Hall,
Albany, Dec. 23, 1850.

This ore occurs on the farm of H. I. Cruger, Esq., in Westchester county. It was furnished for analysis by T. Romeyn Beck, M. D. When applied as a pigment, it has somewhat the appearance of a bronze. It is easily pulverised to a great degree of fineness, has a greasy feel, and contains a small per centage of an oily unctuous body which is readily volatilized by heat. The following are the results of an analysis :

100 grains deprived of water, gave,

Peroxide of Iron,	86.75
Silica,	7.50
Alumina,	2.30
Manganese,	1.95
Lime,	0.20
Magnesia,	0.05
Potash,	0.35
Soda,	0.15
Unctuous organic matter, resembling oil,	0.42
	99.67

The oily matter has an aromatic odor resembling that of some species of laurus. When exposed to destructive distillation it passes off in white vapors, which are so pungent as to excite when breathed, coughing, and a sense of suffocation. When inhaled through the nose, they give rise to a sharp, burning pain of the Schneiderian membrane, which persists for some time after the inhalation.

Mem.—The above mineral is noticed in Lewis C. Beck's Mineralogy of the State of New York, 4to., page 30, under the name of Red ochre.

(K.)

References to various Writings relating to the Natural History of New-York, that have appeared during the year.

ZOOLOGY.

Proceedings of the American Association for the advancement of Science. Second meeting.

Page 409, A Monograph of the fresh water Cottus of North America. By Charles Girard.

Annals of the Lyceum of Natural History. Vol. 5.

Page 1. Observations on the Limosa Scolopacea of Say. By John Bell.

Page 4. Observations on the preceding paper by George N. Lawrence.

Page 9. Synopsis of the Coleopterous Insects of the group Cleridœ, which inhabit the United States. By John L. Le Conte.

Journal of the Academy of Natural Sciences of Philadelphia. Vol. 2. *New Series. Part* 1.

Page 5. An attempt to identify the Longicora Coleoptera of the part of America, north of Mexico. By John L. Le Conte, M. D.

Notice of the BLACK EGYPTIAN IBIS, *by J. Barratt, M. D. From the Middletown (Conn.) Sentinel and Witness of May* 21, 1850.

BLACK EGYPTIAN IBIS—(a rare bird;) *called also, Glossy Ibis;* IBIS *falcinella.*

One of these rare birds, IBIS FALCINELLA, was shot at Middletown, on the banks of the Connecticut, May 9th, time of a high flood. It is a male in full plumage. Its length is twenty-eight inches,* and stands 18 inches high, bill 5 inches long, which is slender and curved. It has been carefully preserved, and is now in the Cabinet of Dr. J. Barratt. By the papers, we learn, that a similar bird was shot at Freshpond, near Cambridge, Mass., on the 8th inst., and has been presented to the Harvard Cabinet of Natural History.

It is highly probable that these birds belonged to the same flock, and may have been driven to the South by the late storms, after crossing Behring's straits, having left the valley of the Nile, in March, as we suppose.

The *Ibis falcinella* is very rarely seen in the U. States. This is the first that has come to our notice on the Connecticut; and has not been known in this country many years.

The Prince of Musignano, was the first to show that the bird called *Tantalas Mexicanus*, by Mr. Ord, (the continuator of Wilson's Ornithology,) was the *Ibis falcinella* of Europe; a bird common in Egypt.

Mr. Nuttall, in vol. 2, p. 89, of his highly interesting work on American Birds, has given a full history of this species of Ibis, with a figure showing the Pyramids in the back ground. To this work we refer the reader (who has access to it.) Mr. N. says, "it is a periodical visitor of Egypt, where, in common with the sacred Ibis, it was revered and embalmed in the vast Catacombs of Saccara and Memphis. It arrives in that country in October, and leaves it in the month of March. They spread themselves into Russia, Siberia, Tartary, Denmark, and occasionally into Sweden, and perhaps Lapland, remaining in those countries till driven to migrate by the inclemency of the approaching winter; at which period they appear to arrive in Africa and Asia. It is a still more rare and accidental visitor to the United States."

"So highly was it honored, that the Ibis became the characteristic hieroglyphic of the country: repeated upon all their monuments, obelisks, and national statues. The abundance of their remains in the catacombs, proves indeed the familiarity, which the species had with the indulgent inhabitants of its favorite country. Diodorus Siculus says, these birds advanced without fear, into the midst of the cities. Strabo relates, they filled the streets and lanes of Alexandria to such a degree, as to become troublesome and importunate. The Ibis is now no longer venerated in Egypt, and is commonly shot and ensnared for food. The markets of the sea coast are now abundantly supplied with them and a white species, as game, both of which are ignominiously exposed for sale, deprived of their heads, a spectacle from which the ancient Egyptians would have recoiled with horror.

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* Mr. Nuttall says, length 23 inches; this I apprehend is a typographical error for 28. Turton in Brit. Fauna, p. 55, says, length 2 ft. 6; extent of wings, 3 ft. 2; weight 18 ounces.

The person who shot the Ibis, at this place, remarked, "how tame it was." This confidence and easy familiarity with man, would render it entirely unfit for a residence in New-England, where there is such a murderous propensity to shoot the feathered race.

Middletown, Ct., May 16, 1850.

A bird of the same species, shot by Mr. Hurst, on Grand Island, in the Niagara, in August 1844, is now in the "State Cabinet." See third annual report, page 22.

MINERALOGY.

Silliman's Journal. New Series.

Vol. 9, p. 287. On the discovery of sulphuret of nickel in northern New-York. By Franklin B. Hough, M. D. (Found at the Sterling iron mine, in Antwerp, Jefferson county, New-York.)

Vol. 9, p. 288. New mineral localities in New-York. By Dr. Franklin B. Hough.

Pearl spar, in Rossie, St. Lawrence county.

Idocrase, near Governeur, St. Lawrence county.

Sulphuret of copper, near Vrooman's lake, Antwerp, St. Lawrence county.

Sulphate of barytes, in Governeur and Antwerp.

Stalactitic quartz, Parish iron mine in Rossie, and Sterling iron mine in Antwerp.

Vol. 9, p. 424. On the existing mineral localities of Lewis, Jefferson and St. Lawrence counties, New-York. By Dr. Franklin B. Hough.

Vol. 9, p. 430. Large crystals of sphene, (with figures,) obtained at Diana, near the Natural Bridge, Lewis county, New-York. Described by Wm. S. Vaux, of Philadelphia.

Vol. 9, p. 449. Analysis of Oak Orchard acid spring water, Alabama, Genesee county, N. Y. By H. Errie and William J. Craw. (The results are heathen Greek to the uninitiated.)

Vol. 10, p. 372. Optical examination of several American micas. By B. Silliman, Jun., M. D.

Vol. 10, p. 383. Analysis of phlogopite, from St. Lawrence co., N. Y. By William J. Craw.

GEOLOGY.

Proceedings of the American Association for the Advancement of Science. Second meeting held at Cambridge, August, 1849.

Page 255. On some fossil remains, from Broome county, N. Y., By W. C. Redfield.

Page 256. On the trails and tracks in the sandstones of the Clinton group of New-York; their probable origin, &c., and a comparison of some of them with *Nereites* and *Myrianites*. By Prof. James Hall.

Page 347. On the brachiopoda of the silurean period, particularly the *leptœnidæ*. By Prof. James Hall.

Page 351. On graptolites, their duration in geological periods, and their value in the identification of strata. By James Hall.

(L.)

CATALOGUE

OF SPECIMENS OF THE ROCKS AND FOSSILS

IN THE GRAY SANDSTONE, MEDINA SANDSTONE, CLINTON GROUP,
NIAGARA GROUP, ONONDAGA SALT GROUP, AND A PART
OF THE WATER-LIME GROUP;

BEING A CONTINUATION OF THE CATALOGUE OF THE STATE GEOLOGICAL COLLECTION AS FAR AS THE FOSSILS ARE NAMED AND DESCRIBED:

By JAMES HALL.

TABLE CASE, No. 7.

1. Roof slate. Rowley's Quarry, N. Lebanon, Columbia co.
2. Slate. One mile west of Hillsdale, Columbia co.
3. Glazed slate. One mile south of Hudson, at the supposed coal mine.
4. Red slate. Near Kinderhook creek, Chatham, Columbia co.
5. Red slate. One mile S. W. of Washington Hollow, Duchess co.
6. Millstone grit. Steel's creek.
7. Shaly sandstone. With fragments of fossils.
8. do. do.
9. do. do.
10. Shaly sandstone. With impressions of *Modiolopsis modiolaris.*
11. Shaly sandstone.
12. Concretionary sandstone.
13. Gray shaly sandstone. Road, 2½ miles north of Rome.
14. Gray sandstone. Woodruff's, south of Rome.
15. Gray sandstone, shaly. Woodruff's, south of Rome.
16. Gray sandstone. Woodruff's, south of Rome.
17. Greenish glazed slate.
18. Gray sandstone. Salmon creek, Village of Florence.
19. do. do.
20. Gray sandstone. Falls of Stony Brook, Redfield.
21. Gray sandstone. Village of Florence.
22. Gray sandstone. With water marked surface. Falls of Salmon creek.
23. Gray sandstone. West of Oswego village.
24. Gray sandstone. Woodruff's quarry, south of Rome.
25. Gray sandstone. Below the dam on Mad river, Camden.
26. Gray sandstone. Dam at Mad river, near Camden.
27. Gray sandstone. Upper falls of Mad river, Redfield.

28. GRAY SANDSTONE. Road to Lorraine from Redfield.
29. GRAY SANDSTONE. 3 miles west of "Ghent Meeting-house," Columbia county.
30. GRAY SANDSTONE. Road south of Rome.
31. GRAY SANDSTONE. Tippler's quarry.
35. GRAY SILICIOUS SANDSTONE. With shaly nodules, and containing galena. Columbia co.?
36. CONTORTED LIMESTONE. 1¾ miles N. W. of Stand Pondville, Dutchess co.
37. MILLSTONE GRIT. Bloggs' Clove, Blooming-grove, Orange co
38. COMPACT SANDSTONE. Two Ponds, Monroe, Orange co.
39. MILLSTONE GRIT, (BOWLDER.) Hamptonburgh, Orange co.
40. MILLSTONE GRIT. Deerpark, foot of Shawangunk Mt. range.
41. GRAYWACKE. 2 miles west of Woodbury; Monroe, Orange county.
42. MILLSTONE GRIT. Deerpark.
43. CONGLOMERATE. Canterbury., Orange co.
44. FINE GRAINED GRIT ROCK. Base of Shawangunk mountain, Rochester, Ulster co.
45. GRIT ROCK. Walls of the Shawangunk lead vein, Sullivan county.
46. MILLSTONE GRIT. Deerpark.
47. BRECCIA. 2 miles N. E. of Craigville, Orange co.
48. YELLOWISH SANDSTONE. Stockport Landing, Columbia co.
49. COMPACT SHALY SANDSTONE. Near Hydepark, Dutchess co.
50. A METAMORPHIC SLATY AND CRYSTALLINE ROCK. ——?
51. COMPACT METAMORPHIC GRIT ROCK. ——?
52. BROWNISH SILICIOUS LIMESTONE, METAMORPHIC. ——?
53. COMPACT SHALY SANDSTONE.
54. SHALY SANDSTONE. With thin layers of shale. ——?
55. SILICIOUS LIMESTONE.
56. LIMESTONE. Blogg's Clove, Blooming-grove, Orange co.
57. LIMESTONE. Warwick, Orange co.

IN VERTICAL CASE, No. 7.

58. Grey sandstone. Three miles north of Salem, Albany Co.
59. Black slate. Hoosick, Rensselaer co.
60. Limestone. West of Granville, Washington co.
61. Limestone. Snake-Hill, Saratoga co.
62. do do
63. Red shale. Easton, Washington co.
64. Shale. Sugarloaf, Orange co
65. do do
66. Compact sandstone. Bellvale, Warwick.
67. Red slate. Blooming-grove, Orange co.
68. Millstone grit, (compact.) Canterbury, Orange co.
69. Red shaly sandstone. do
70. Red sandstone. Pine Hill, Cornwall, Orange co.
71. Red millstone grit. Carpenter's Point, Deerpark.
72. Red shale. Cambridge, Washington co.

TABLE CASE, No. 8.

1. Oneida conglomerate. Steel's creek, Herkimer co.
2. do do
3. do do
4. do Cleveland, Oneida lake.
5. do Mason's quarry, S. W. of Utica.
6. do do
7. do Mansfield, S. of Hampton.
8. do south of New Hartford.
9. do Mason's quarry, S. W. of Utica.
10. do near Starch Factory creek.
11. do do
12. do Steel's creek.
13. do Mansfield, S. of Hampton.
14. Millstone grit. On top of Hill between Ferguson creek and Starch Factory creek, near Utica.

MEDINA SANDSTONE.

15. Medina sandstone, gray beds. Lewiston, Niagara co.
16. do do
17. do with ripple marks. Lewiston, high bank of river.

18.	MEDINA SANDSTONE,	gray beds.	Lewiston, Niagara co.
19.	do	with undulating lines of deposition.	Martville, Cayuga co.
20.	do	Wayne co.	
21.	do	Near Martville.	
22.	do	Quarry N. of Martville.	
23.	do	Mill below Martville, towards Hannibalville.	
24.	do	Hulmes' quarry, Sterling, Cayuga co.	
25.	do	with *Dictuolites Beckii.*	Medina.
26.	do	upper mass	Hulmes' quarry, Sterling, Cayuga co.
27.	do	upper mass.	Cental's Mill, Wayne co.
28.	do	do	do
29.	do		Hulmes' quarry, Sterling, Cayuga co.
30.	do		do
31.	do		near Martville.
32.	do		do
33.	do	upper gray mass.	Medina.
34.	do	do	Lewiston, Niagara co.
35.	do	do	Rochester.
36.	do	variegated.	Rochester.

TABLE CASE, No. 9.

MEDINA SANDSTONE.

1.	MEDINA SANDSTONE.	Sterling Centre, Cayuga co.
2.	do	do
3.	do	do
4.	do	do
5.	do	do
6.	do	Park's mill-dam, E. of Amboy Centre, Oswego co.
7.	do	with concretionary markings. Oswego village.
8.	do	with mud cracks. Oswego village.

9. MEDINA SANDSTONE, with *pleurotomaria pervetusta.* Medina.

10. do do

11. do with *Pleurotomaria pervetusta* and *Lingula cuneata.* Medina.

12. do with *Pleurotomaria pervetusta.* Medina.

13. do do

14. do do

15. do East side of Irondequoit bay.

16. do with *Palaeophycus tortuosus.* Vinton's quarry, Brighton, Monroe co.

17. do with *Lingula cuneata.* Medina, Orl. co.

18. do do

19. do do

20. po do

21. do do

22. do do

23. do with *Palaeophycus.* Medina.

24. do with *Modiolopsis primigenius.* Medina.

25. do with fucoides, ——?

26. do do

27. do do

28. do do

29. do with *Arthrophycus harlani,* (loose,) near Cleveland, Oneida lake.

30. do with *Arthrophycus harlani,* Me-dina, Orleans co.

31. do near Sterling, Cayuga co.

32. do with *Arthrophycus harlani.* Medina, Orleans co.

33. do with *Arthrophycus harlani* and *Fucoides? auriformis.* Medina.

34. do with *Dictuolites Beckii.* Medina.

VERTICAL CASE, No. 7.

MEDINA SANDSTONE. (CONTINUED.)

35. MEDINA SANDSTONE, with *Lingula cuneata*, showing current markings. Lockport, Niagara co.
36. GEODE, MEDINA SANDSTONE. Lockport.
37. MEDINA SANDSTONE, upper gray layers. Medina, Orleans co.
38. do variegated. Rochester, Monroe co.
39. do Lewiston, Niagara co.
40. do upper gray layer. do
41. do conglomerate. Wolcott, Wayne co.
42. do with water markings. Lewiston.
43. do showing diagonal lines of lamination. Rochester, Monroe co.
44. do Martville, Cayuga co.
45. do inclosing nodules of shale. Rochester, Monroe co.
46. do with *Arthrophycus Harlani*. Wayne co.
47. do variegated and shaly. Medina, Orl. co.
48. do shaly. Lewiston.
49. do Redfield, Oneida co.
50. do upper shaly layers. Medina.
51. do variegated. Lewiston.
52. do upper greenish shaly layers. Lewiston.
53. do do do
54. do upper gray layers, with *Cytherina cylindrica*. Medina.
55. do variegated. Near Martville, Hannibal, Cayuga co.
56. do variegated. Lewiston, Niagara co.
57. do Rochester, Monroe co.
58. do very shaly. Irondequoit bay, Monroe co.
58. do Medina, Orleans co.
60. do with *Lingula cuneata and Cytherina cylindrica*. Medina, Orleans co.
61. do with nodules of shale enclosed. Medina.
62. do do
63. do with *Lingula cuneata*. Lockport.
64. do do Medina.

65. MEDINA SANDSTONE, with *Lingula cuneata* and *Pleurotomaria pervetusta*. Medina, Orleans co.
66. do with *Lingula cuneata*. Medina.
67. do Clarendon, Orleans co.
68. do with tortuous lamination. Rochester.
69. do Shaly variety. Lewiston.
70. do do
71. do do
72. do Shaly. Rochester, Monroe co.
73. do do. Martville, Cayuga co.
74. do with *Cytherina cylindrica* and *Lingula cuneata*. Medina.
75. do with concretionary surface. Oswego.
76. do with *Arthrophycus Harlani*. Medina.
77. do do Adams' Basin, Monroe co.
78. do with *Fuicoides? heterophyllus*. Adams' Basin, Monroe co.
79. do with *Fucoides? heterophyllus*. Medina, Orlean's co.
80. do do
81. do with *Fucoides? heterophyllus*. Rochester, Monroe co.
82. do with fucoidal markings. Medina.
83. do do
84. do do Martville, Cayuga co.
85. do variegated. Phillipsburg, Oswego co.
86. do with fucoidal markings. Lewiston
87. do with *Arthrophycus harlani*, and conglomerate. Oswego co.
88. do with *Arthrophycus harlani*. Medina, Orleans co.
89. do with ripple marks. Medina, Orleans co.
90. do with *Arthrophycus harlani*. Sodus, Wayne county.
91. do upper gray layers. Medina, Orleans co.
92. do do
93. do Medina, Orleans co.

TABLE CASE, No. 10.

CLINTON GROUP.

1. Conglomerate, with shaly surface. Blackstone's quarry, New Hartford.
2. Shaly sandstone, with *Buthotrephis palmata*. Blackstone's quarry, New Hartford.
3. do with *Rusophycus bilobatus*. Gaylord's and Norton's quarry, New Hartford.
4. do with *Buthotrephis gracilis*. Blackstone's quarry, New Hartford.
5. Sandstone, with *Beyrichia*. New Hartford.
6. Conglomerate. Stebben's creek, near Clinton village.
7. do with iridescent surface. Blackstone's quarry, New Hartford.
8. Oolitic iron ore. Bennett's ore bed, west of Clinton village.
9. do do
10. do do
11. do Wadsworth's quarry, New Hartford.
12. do with crinoidal joints. Eames' quarry, near Verona.
13. do with crinoidal joints. Parson's quarry, near Verona.
14. do Hammond's orebed, Westmoreland, Oneida co.
15. do Parson's quarry near Verona.
16. do with *Leptæna sericea*. Bennett's ore bed, near Clinton village.
17. Shaly sandstone, with *Leptæna sericea*. Saw mill, south of Verona, Oneida co.
18. Limestone, with *Pentamerus oblongus*. Rochester.
19. do do
20. Silicious limestone. do Wolcott, Wayne co.
21. Limestone, with *Atrypa hemispherica*. Mill, below Martville, Cayuga co.
22. do with fragments of *Pentamerus oblongus*. Sodus, Wayne co.
23. Oolitic iron ore. Rochester.
24. do upper beds. Stebbins' creek, Oneida co. (2 specimens.)

25. Limestone, with *Leptæna rugosa.* Donelly's quarry, Madison.

26. Oolitic iron ore. Wolcott, Wayne co.

27. do with fragments of shells. do

28. do with *Pentamerus oblongus.* do

29. do with *Spirifer radiatus.* do

30. do do Donelly's quarry, Madison.

31. Ferruginous limestone, with *Pentamerus oblongus.* Donelly's quarry.

32. Shaly sandstone, with *Rusophycus pudicus.* Gaylord's quarry, New Hartford.

33. do with *Rusophycus pudicus.* Gaylord's quarry, New Hartford.

34. Atrypa congesta. Reynale's Basin.

35. do plicatella. do

36. Shale, with *Graptolithus clintonensis.* Sodus.

37. Limestone, with *Atrypa hemispherica.* Rochester.

39. do do *reticularis and Pentamerus oblongus.* Donelly's quarry, Madison.

39. Gray sandstone, upper mass of Clinton group, with fragments of Homalonotus delphinocephalus. Steel's creek, Herkimer co.

40. do upper mass of Clinton group. Steel's creek, Herkimer co.

41. Shale, with *Atrypa congesta.* Reynale's Basin.

42. *Atrypa plicatella.* Reynale's Basin.

43. *Chætetes lycoperdon.* Reynale's Basin, Niagara co.

44. Upper gray sandstone, with *Modiolopsis ovata.* Remington's quarry, S. of Mohawk village.

45. Limestone, with *Atrypa congesta.* Medina, Orleans co.

46. *Caninia bilateralis.* (2 specimens.) Reynale's Basin.

47. *Atrypa congesta.*

48. Fibrous sulphate of strontian. Stark, Herkimer co.

49. do With carbonate of lime, &c. Stark, Herkimer co.

50. Crystalized sulphate of strontian. Stark, Herkimer co.

51. Gypsum. do

VERTICAL CASE, No. 8.

CLINTON GROUP. (CONTINUED.)

52. SHALY SANDSTONE, with fucoidal markings. Blackstone's quarry, New Hartford.
53. SHALE, with obscure fossil markings. do.
54. GREEN SHALE. Martville, Cayuga co.
55. FERRUGINOUS SANDSTONE, with *Beyrichia*. New Hartford.
56. SHALY SANDSTONE, *Rusophycus subangulatus*. Blackstone's quarry, New Hartford.
57. do with fucoidal markings. do.
58. SHALE, with *Buthotrephis gracilis*. Near Clinton village.
59. SANDSTONE, with *Buthotrephis palmata*. Fox-Hollow, Herkimer co.
60. SHALY SANDSTONE, with Organic markings. Blackstone's quarry, New Hartford.
61. do with *Rusophycus bilobatus*. Gaylord and Norton's quarry, New Hartford.
62. SHALE, with fragments of *Buthotrephis ramosa*. Blackstone's quarry, New Hartford.
63 do do
64. SHALY SANDSTONE, with fucoidal fragments. Two miles S. W. of Verona.
65. CONGLOMERATE, with iron pyrites. Blackstone's quarry.
66. do with iridescent surface. do
67. do with shaly surface. Stebbin's creek, Oneida co.
68. do with shaly surface. Rogers' cr'k., Oneida co.
69. do Blackstone's quarry. New Hartford.
70. SHALY SANDSTONE, with fuicoidal markings. Near Clinton village.
71. do with fuicoidal markings. Clinton quarry, north of Martville.
72. SHALE. A quarry north of Martville.
73. SHALY SANDSTONE, with fucoidal remains. Quarry south of Clinton village.
74. HORNSTONE, composed of fragments of shells. Rochester.
75. SANDSTONE, with *Beyrichia*. New Hartford.

76. Grey sandstone, with *Lingula oblonga*. Quarry north of Martville.
77. Ferruginous sandstone, with fragments of organic remains. New Hartford.
78. do Stark, Herkimer co.
79. do Steel's creek.
80. Shaly sandstone. Van Hornsville, Herkimer co.
81. Shaly limestone. Bushnell's, Oneida lake.
82. do Quarry near Verona.
83. do with *Fenestella prisca*? Near Verona.
84. do do Martville.
85. do Martville.
86. Green shale. do
87. do Swift's creek.
88. Limestone. Near Verona.
89. Shaly limestone. do
90. Oolitic iron ore, with *Beyrichia*. Van Hornsville.
91. do Swift's creek.
92. do Bennet's ore-bed, near Clinton village.
93. do do
94. do with concretions and crinoidal joints. Pearson's ore-bed, near Verona.
95. Red sandstone. Steel's creek.
96. Red conglomerate. Steel's creek, Herkimer co.
97. Oolitic iron ore, with limestone. Wolcott Wayne co.
98. Limestone, with *Pentamerus oblongus*. Sodus, Wayne co.
99. do do Rochester.
100. do do do
101. Shale, with *Leptæna rugosa*. Donelly's quarry.
102. Oolitic iron ore, with calcarious spar. Wolcott, Wayne co.
103. Shaly limestone, with *Fenestella prisca*. Taberg furnace.
104. Shale, with *Atrypa plicatella*. do
105. do with *Beyrichia* and *Tentaculites*. do
106. Oolitic iron ore, with fragments of fossils. Stebbin's creek, Oneida co.
107. do Stebbin's creek, Oneida co.
108. do with fragments of fossils. South of Clinton village.

109. Oolitic iron ore. Quarry north of Clinton village.
110. do Hammonds' quarry.
111. do with *Phænopera constellata*. Wolcot, Wayne county.
112. do with sulphate of barata. Wolcott, Wayne county.
113. do with *Pentamerus oblongus*. Donelly's quar.
114. Limestone, with fragments of fossils. Near Martville.
115. Sandstone, with iron pyrites. Stebbin's quarry, near Clinton village.
116. Shaly sandstone, with casts of *Leptæna*. Near Blackstone's quarry, New Hartford.
117. Ferruginous sandstone, with cast of *Leptæna subplana*. Near Clinton village.
118. Shaly sandstone, with *Leptaena rugosa*. Near Tippler's quarry.
119. Silicious limestone, with *Leptaena rugosa*. Munger's quarry, O. L. P O.
120. do with *Leptaena rugosa*. Oneida lake.
121. Silicious and shaly limestone. Above the upper ore bed, Swift's creek, Oneida co.
122. Shaly limestone, with *Leptæna corrugata* and *Pyrenomæus cuneatus*. Clinton village.
123. Shaly sandstone, with *Avicula emasculata*. Munger's quarry, Oneida lake.
124. do with imperfect fossils. Gaylord's quarry, near Utica.
125. do with *Rusophicus bilobatus*. Gaylord's and Norton's quarry, N. Hartford.
126. do do
127. do do
128. do with *Buthotrephis palmata*. Gaylord's and Norton's quarry, N. Hartford.
129. do with roots of marine plants.
130. Gray Sandstone, with concretions.
131. Shaly sandstone, with fucoidal markings. Van Hornsville, Herkimer co.
132. do Stark, Herkimer co.

133. Silicious limestone, with sulphate of strontian in crystals, Stark, Herkimer co.
134. do do
135. Gypsum, Stark, Herkimer co.
136. Dark colored gypsum. Stark, Herkimer co.
137. Sandstone and gypsum. do
138. Shale with gypsum. do
139. do do

TABLE CASE, No. 11.

NIAGARA GROUP.

1. Shale, with *Phacops limulurus*. Lockport.
2. do with impressions of *Phacops limulurus*. Lockport.
3. do with *Homalonotus delphinocephalus*. do
4. do with *Dictuonema reteformis*. do
5. do with *Caryocrinus ornatus*. do
6. do with *Spirifer niagarensis*. do
7. do do do
8. do with *Leptaena subplana*. do
9. do with *Atrypa nitida*. do
10. Limestone composed of crinoidal joints. do
11. Anhydrous gypsum. do
12. White gypsum, or alabaster. do
13. Encrinal limestone, (polished.) do
14. Limestone, with crystallized coral. do
15. Silicious limestone. Niagara Falls.
16. Dark limestone, with *Cytherina*, Wayne co.
17. Dark bituminous limestone, do
18. do do
19. Pearl spar. Lockport.
20. Dogtooth spar. do
21. Pearl spar and dogtooth spar. Lockport.
22. Dogtooth spar. Lockport.
23. Limestone, with small geodes of Pearl spar. Lockport.
24. do with galena, sulphuret of lead. Rochester.
25. do with zinc blend. Niagara Falls.
26. do with crystals of zinc blend. do.

27. Fragments of orthocera. Wayne co.
28. do do
29. Sulphate of strontian. Lockport.
30. do do
31. Pearl spar with dogtooth spar. Lockport.
32. Dark limestone, with cavities. Barre, Orleans co.
33. do upper part of rock. Niagara Falls.
34. Encrinal limestone. Niagara Falls.
35. Limestone, with *Cladopora seriata*. Lockport.
36. Dark limestone. Near Lenox.
37. Brecciated limestone. Oneida co.
38. do Ham's quarry.
39. Conglomerate Limestone.
40. do
41. do
42. do
43. do Ham's and Bigelow's quarries.

VERTICAL CASE.

NIAGARA LIMESTONE. (Continued.)

44. Shale, with nodules of gypsum replacing *Caryocrinus ornatus*. Lockport.
45. do with *Orthoceras undulatus*. Lockport.
46. do with *Dictuonema reteformis*. do
47. do with *Leptaena striata*. do
48. do with *Leptaena rugosa* and *Leptaena striata*. Lockport.
49. do with *Orthis elegantula*. Lockport.
50. do with *Orthis testudinaria* and *Leptaena rugosa*. Lockp't.
51. do with *Orthis testudinaria*. Lockport.
52. do with *Bumastis barriensis*. do
53. do with fragments of various fossils. Lockport.
54. do with *Orthis testudinaria* and *Leptaena rugosa*. Lockp't.
55. do with *Avicula emacerata*. Lockport.
56. do with *Leptaena subplana*. do
57. Encrinal limestone. Near Lewiston.
58. Shale, with *Caryocrinus ornatus*, and cavities filled with calcarious spar. Lockport.

59. Limestone, with crinoidal columns. Lockport.
60. Astrocerium venustum, from the original excavation of the Erie canal, 1825; (polished specimen.) Lockport.
61. Limestone, with striated surface, lignelite. Lockport.
62. do with *Atrypa reticularis*. Lockport.
63. Brown bituminous limestone. Rochester.
64. Limestone, with *Trematopera ostiolata*. do.
65. do with *Atrypa neglecta*. do.
66. do with vertically striated surface, lignilites. Lockport.
67. Brecciated limestone. Near Rochester.
68. White gypsum, alabaster, (polished specimens.) Lockp't.
69. Geode of dogtooth spar. Lockport.
70. Encrinal limestone. do
71. do (polished specimen.) Lockport.
72. Limestone, with dogtooth and pearl spar. Lockport.
73. do with dogtooth spar. do
74. do with pearl spar. do
75. do with geode of dogtooth spar. do
76. Sulphate of Strontian. Lockport.
77. Limestone, with pearl spar and dogtooth spar. Lockport.
78. do with geode of pearl spar, with selenite. Rochest'r.
79. Anhydrous gypsum. Lockport.
80. Sulphate of strontian. do
81. Limestone, with pearl spar. Lockport.
82. do do
83. do with geode filled with bituminous coal. Lockp't.
84. Limestone, with dog tooth spar, Lockport, N. Y.
85. do with pearl spar and dog tooth spar, do
86. do with dog tooth spar, do
87. do with dog tooth spar, do
88. Pearl spar, (a geode,) do
89. do and Dogtooth spar, do
90. do rosecolored, do
91. Limestone, with pearl spar, rosecolored, and dogtooth spar, Lockport, N. Y.
92. do with dogtooth spar and sulphate of strontian, Lockport, N. Y.

93. Limestone, with dogtooth spar. Lockport, N. Y.
94. Pearl spar in geode of limestone. do
95. Dogtooth spar. do
96 do and Pearl spar, replacing *Astrocerium venustum*. Lockport, N. Y.
97. Brown spar. Lockport, N. Y.
98. Limestone, with *Euomphalus hemispherica*. do
99. Concretionary limestone, four miles north of Manchester.
100. Limestone, with concretionary nodes upon surface, Niagara Falls, N. Y.
101. Geode, with pearl spar and crystals of sulphate of strontian. First excavation of the Erie canal, 1825, from Mr. Bett, Lockport, N. Y.
102. Limestone, a concretion, near Skenandoa.
103. Dark bituminous limestone. Between Lenox Basin and Canastota.
104. Limestone, with cavity showing laminæ of growth of *Astrocerium venustum*, Rochester.
105. Compact limestone, with *Cytherina*. Ham's quarry, Cayuga county.
106. Concretionary limestone, four miles north of Manchester.
107. Compact dark colored limestone. Wolcott, Wayne county.
108. do do do do do
109. Limestone, with *Cladopora seriata*. Sweden, Monroe county.
110. do *Diplophyllum cespitosum*. Lockport.
111. Compact limestone, with *Cytherina*. Butler, Wayne Co.
112. Limestone, with cavities lined with crystals of calcareous spar. Lockport.
113. Shaly limestone, with *Spirifer crispus* and minute *Cytherinæ*. Ham's quarry, Cayuga county.
114. Compact brown limestone. Rochester, Monroe county.
115. do limestone. Four miles west of Manchester.
116. Concretionary limestone. Steel's creek, Herkimer county.
117. Brecciated limestone. do do
118. Limestone, with surface markings. Ham's quarry, Cayuga county.
119. Reddish compact limestone. Steel's creek, Herkimer Co.
120. Concretionary do Near Skenandoa.
121. Brecciated do do

122. Brecciated limestone. Near Skenandoa.
123. do do do
124. do do do
125. Concretionary do do

TABLE CASE, No. 12.

ONONDAGA SALT GROUP.

1. Compact red shale. Cruger's mill, Herkimer county.
2. Variegated shale. Chittenango.
3. Red shale. Between Sauquoit creek and Paris hill.
4. Variegated shale. Baldwinsville.
5. Red shale, with green spots. Baldwinsville.
6. do do do Oneida castle.
7. Greenish gray shale. North of Chittenango village.
8. Grey shale. South of Port Byron.
9. Green shale. Churchville, Monroe county.
10. do do with seams of gypsum. Near Lake Sodom.
11. Red selenite, with green shale. Clyde, Wayne county.
12. Red gypsum, do do Lake Sodom.
13. Compact gypsum, do do Monroe county.
14. Grey shale, with cavities of crystals. Near Lake Sodom.
15. do with remains of *Cytherina*. Near Peru.
16. do with cavities of crystals. Near Lake Sodom.
17. Calcareous infiltrations, between layers of gypsum. Allen's creek, south part of Monroe Co.
18. Gypseous marl. Newark, Wayne county.
19. Gypsum. Allen's creek.
20. do do
21. Gypseous marl, with seams of fibrous gypsum. Monroe county.
22. Selenite. Nine mile creek.
23. do with fragments of marl enclosed. Newark, Wayne county.
24. do with fragments of marl enclosed. Newark, Wayne county.
25. do with fragments of marl enclosed. Near Camillus.

26. Gypseous marl, with marks of pseudomorphic crystals of common salt. S. of Syracuse.
27. do do Hill S. E. of Chittenango.
28. do do Bull's quarry, Lenox.
29. do do do
30. do do Kelby's quarry, Lenox.
31. Pseudomorphic crystal of common salt. S. of Syracuse.
32. do do Bull's quarry, Lenox.
33. do do Nine mile creek.
34. Gray shale. Bull's quarry, Lenox.
35. do with obscure fossils. Near Bellisle.
36. do with impressions of fossil shells. Bull's quarry, Lenox.
37. do do do
38. do with obscure fossil shells. Bull's q'y Lenox.
39. do with plant-like impressions. do
40. do with some plant-like impressions. do
41. Serpentine. Near Syracuse.
42. do do
43. Calcareous serpentine. Near Syracuse.
44. do do
45. do do
46. do do
47. Serpentine, with crystals of calcareous spar. Near Syracuse.
48. do Syracuse.
49. Gypseous marl. Nine mile creek.
50. Black gypseous marl, with selenite. S. of Bellisle.
51. Nodule of gypsum and marl. S. of Chittenango.
52. Selenite, with black gypseous marl. Howland's quarry, Springport. Cayuga co.
53. do do do
54. Dark shale, with surface covered with black selenite. Marble's quarry, Port Byron.
55. Gray gypseous marl, with spherical cavities containing concretions. Lenox.
56. Impure limestone, with spherical cavities.
57. Hydraulic limestone. Troopsville.
58. Ash colored hydraulic limestone, with remains of *Streptelasma*. Black Rock.

59. Hydraulic limestone, with lignilites. Caneseraga creek.
60. do do Onondaga.
61. do do do
62. do do Caneseraga creek.
63. do do do
64. Vermicular limestone. Near Syracuse.
65. Hydraulic limestone, with head of *Eurypterus remipes.* Oriskany.

VERTICAL CASE, No. 12.

ONONDAGA SALT GROUP. (Continued.)

66. Variegated red marl. Near Oneida castle.
67. Red marl, with green spots. Chittenango.
68. Red shale. Between Sauquoit creek and Paris hill.
69. Green shale. do
70. Gray shale. Near Chittenango.
71. do Allen's creek, Monroe co.
72. Gray Gypseous marl. Orlean's co.
73. Gray gypseous shale. Near Churchville.
74. Gypseous marl. Allen's creek.
75. do Lockville, Wayne co.
76. Friable sandstone. Near Paris hill.
77. Gypseous shale. do
78. do do
79. Gypseous marl. Allen's Creek.
80. do with seams of fibrous gypsum. S. part of Monroe county.
81. Greenish marl, with fibrous gypsum. Jordan.
82. do do do
83. Red gypsum, with gypseous marl. do
84. do nodules. Newark, Wayne county.
85. Gypseous marl. do
86. do Clyde, do
87. Marl, with red selenite. Newark, do
88. Gypseous marl. Near Port Gibson, Monroe county.
89. Argillaceous limestone. Near Churchville. Monroe county.
90. Selenite, with decomposing iron pyrites. Newark.
91. Gypsum. do

92. Gypsum. Allen's creek.
93. do Leroy.
94. do do
95. do do
96. do nodule. Monroe county.
97. Granular gypsum. Allen's creek.
98. Gypseous marl, with selenite. S. of Belleisle.
99. Grey gypseous marl.
100. Grey argillaceous limestone.
101. Gypseous shale. Near Waterville.
102. Compact limestone, with minute vermicular cavities. Waterville.
103. do with minute cavities filled with concretions. Near Waterville.
104. Grey shale, with cavities made by crystals. Near Jordan Lake.
105. Dark shaly limestone. Near Waterville.
106. Compact limestone. do
107. Shaly limestone. do
108. Grey shale.
109. Gypseous marl, with selenite. Newark, Wayne county.
110. do Near Camillus.
111. do do
112. Selenite. do
113. Gypseous marl, with selenite and marks of pseudomorphic crystals. Near Camillus.
114. do with marks of pseudomorphic crystals. Near Camillus.
115. Pseudomorphic crystals of common salt. Camillus.
116. do do do
117. do do do
118. do with imperfect fossil shells on shale. Lenox.
119. Imperfect pseudomorphic crystals. Brown's quarry, near Caneseraga creek.
120. Gypseous shale, with marks of pseudomorphic crystals. Near Belleisle.
121. Gypseous shales, with marks of pseudomorphic crystals. Lenox.
122. do Near Camillus.

123. Pseudomorphic crystal of common salt. Near Camillus.
124. Gypseous shale, with pseudomorphic crystals. Near Camillus.
125. Dark colored shale.
126. Grey shale. Near Belleisle.
127. Dark shale, with impression of marine plants. Lenox.
128. do do do
129. Gray shale. Chittenango.
130. Serpentine and limestone. Syracuse.
131. do do
132. do do
133. do (polished) do
134. do do
135. Serpentine, (polished.) do
136. do do
137. do do
138. do do
139. do do
140. do do
141. do do
142. do do
143. do do
144. Serpentine and limestone. do
145. Sulphate of strontian in gray marl. Syracuse.
146. Gray marl, with crystals of sulphate of strontian. Syracuse.
147. Gray gypseous marl. Lenox.
148. Gray shale, with impressions of fossil shells. Lenox.
149. Shale, with obscure fossil shells. Lenox.
150. Vessicular limestone. Onondaga Hollow.
151. do Lenox.
152. do
153. do Lenox.
154. do Port Byron.
155. do
156. do Near Syracuse.
157. Dark shale. Cherry valley.
158. Limestone. Chittenango.
159. do with drusy cavities. Oriskany Falls.
160. Gypseous marl. Cherry Valley.

161. Grey shaly limestone. Chittenango.

162. Gypseous marl, with calcareous incrustations. Allen's creek, Monroe county.

163. Hydraulic limestone, with cavities.

164. Grey gypseous shale. Chittenango.

165. do do

166. Gypseous marl.

167. Nodule of gypsum. Near Jamesville.

168. Gypseous marl, with seams of fibrous gypsum. Phelps, Ontario county.

169. Selenite, with compact gypsum. Phelps, Ontario co.

170. Black gypseous marl, with selenite. Springport, Cayuga co.

171. do do do

172. do do do

173. Limestone above gypsum beds. Jamesville.

174. Gypseous marl, with nodules of gypsum. S. of Chittenango.

175. Compact gypseous marl.

176. do

177. Gravel cemented by gypsum. Boring at Salina.

178. Gypseous shale. Kennady.

179. Compact limestone, with vessicular cavities filled with crystaline matter. Near Lanak's mill.

180. Compact limestone, with zinc blend. do

181. do with irregular cavities. do

182. Hydraulic limestone, with lignilites. do

183. do do do

184. do with obscure fossils. Byron, Genesee co.

185. do with cherty nodules. Near Marcellus.

186. do do do

187. Compact shaly limestone, Phelps, Ontario co.

188. Crystalized gypsum. Deposites from the salt-vats, (10 specimens.) Syracuse.

189. Calcareous formation, having oolitic structure. Deposites from salt-vats, (4 specimens.) Syracuse.

190. Oolite. Deposites from salt-vats (3 spe.) Syracuse.

191. Calcareous mass, showing oolitic and pitted structure. Deposite from salt-vats. Syracuse.

Upper part of Onondaga salt group continued in vertical case of water-lime group.

1. Hydraulic limestone. Allen's creek.
2. do do
3. do do
4. do Clarence Hollow.
5. do Allen's creek.
6. do do
7. do do
8. do do
9. do Monroe co.
10. do Caledonia.
11. do Near Lewiston, Niagara co.
12. do Allen's creek.
13. do Williamsville, Erie co.
14. do do
15. do Street Farm, Caledonia.
16. do do
17. do Allen's creek.
18. do Street Farm, Caledonia.
19. do Phelps, Ontario county,
20. do One mile east of Vienna.
21. do Near Vienna.
22. do with sulphate of strontian. Street farm, Caledonia.
23. do Phelps, Ontario county.
24. do (partially burned.) Phelps, Ontario county.
25. Shaly hydraulic limestone. Phelps, Ontario county.
26. Hydraulic limestone, with nodule of chert. Marcellus.
27. do with crystaline nodules. Lanak's mills.
28. do with crystaline nodules. Lanak's mills.
29. Shaly hydraulic limestone.
30. Dark colored hydraulic limestone. Marcellus.
31. Hydraulic limestone. Cherry valley.
32. do (dark colored.) Near Marcellus.

33.	Shaly Hydraulic limestone.	Near Deansville, Oneida Co.
34.	do	(dark colored.) Near Deansville, Oneida county.
35.	Hydraulic limestone.	Onondaga valley.
36.	do	with fluor spar. Manlius.
37.	do	do do
38.	do	do do
39.	do	do do
40.	do	do do
41.	do	do do
42.	do	Onondaga Valley.
43.	do	Cherry Valley.
44.	do	Phelps, Ontario county.
45.	Gypseous shaly limestone.	
46.	Hydraulic limestone,	Near Lanak's Mills.
47.	do	(shaly.) Oriskany Falls.
48.	do	Chittenango.
49.	do	Near Manlius.
50.	do	with *Anhydrite*.
51.	Vessiculæ limestone.	Near Syracuse.
52.	Hydraulic limestone.	E. Steel's creek, Herkimer Co.
53.	do	upper part shaly, with crystals of baryta. Phelps, Ontario county.
54.	do	black, shaly upper layers. Phelps Ontario county.
55.	do	with *Lingulæ*. Cherry Valley.
56.	do	Vessicular. Oriskany.
57.	do	do
58.	do	Below Jamesville.
59.	do	with cavities filled with crystaline matter. Near Jamesville.
60.	do	with crystals of magnesian carbonate of lime. Near Marcellus.
61.	do	crystals of magnesian carbonate of lime. Near Marcellus.
62.	do	with nodule of chert. Near Marcellus.
63.	do	with gypsum. Near Syracuse.

MEMORANDUM OF DRAWERS AND BOXES OF FOSSILS,

Principally of duplicate specimens from various rocks and groups, in the basement and in the shed of the old State Hall.

To the Regents of the University
Of the State of New-York:

Gentlemen,—In answer to the requirement to prepare a catalogue of the duplicate specimens which have been collected in the department of Palaeontology, I must beg leave to state that when I began the Palaeontology in 1843, it was my wish to collect as far as possible suites of fossils for the State collection and for the Colleges, as had been done of the rocks and minerals during the Geological survey; convinced of the great importance of having these collections, and that no time could ever be so favorable for the object as during the progress of the necessary collections for the Palaeontology. Having, however, no appropriation for the employment of an assistant, I hired persons at my own expense for two or three years; and a large part of the collection of duplicates enumerated in the subjoined list, was thus made.

Finding it impossible to make the collections with my own means, I abandoned the intention of making collections for the colleges; and for the purposes of obtaining specimens for description, found it best to purchase them, or to employ collectors occasionally in a few localities.

A complete catalogue of individual specimens in the duplicate collections becomes, equally, as with the arranged collection, impossible at the present time, for the reason that many could not now be characterized by names. Neither would such a catalogue be of any value until some permanent arrangement of the specimens be made. They are now placed in drawers, sometimes piled two or three tiers deep, and others are packed in boxes.

During the past summer, the rooms formerly appropriated to this department were otherwise disposed of, and the specimens removed to a basement room, damp and dark, under the west end of the main building. This place is entirely unfit for such purposes; from its dampness it is impossible to use it as a working room, and there is not light enough to examine carefully and arrange the specimens. Under these circumstances I have not opened boxes where the specimens are much better protected and safer than they can be otherwise. All that I have been able to do, is to endeavor to arrange in some order the drawers, at least so far as to place them in a temporary case, on one side of the room.

More than a year since I began a system of numbering for all the duplicate specimens, with a view to catalogue them so far as reference to the different rocks and groups, and known genera, could be made; and I had procured cases for the arrangement of the specimens. When the rooms were otherwise appropriated last summer, most of the drawers of these cases were piled up on the floor of the basement room, and the cases themselves converted into other uses. In the present uncertain and disordered state of this collection, with no place to arrange the cases of drawers, this system of cataloguing cannot be continued.

You will perceive by the number of boxes and drawers enumerated, that there is a large collection; the drawers alone contain more than three thousand specimens. Many of these are duplicates, and many of them are not the most perfect specimens; but they are such as a collector does not pass by; and many or all are useful in making out the description of species.

The collection contains many good and valuable specimens; which, after selecting a very perfect suite could be made available either for collections for the colleges and academies, or for exchanges, should it ever be regarded as desirable to extend the collections in this department beyond the limits of the State.

Many of the drawers contain the specimens just as they have been distributed from the boxes, no selection or separation having yet been made. These drawers have a label of the locality from which the specimens have been collected.

I would beg leave to call your attention to the fact, that the present situation of these specimens is very unfavorable to their safety. Those in the smaller drawers are, in a high degree, from their exposure, and from the room being used as a general lumber room, exposed to dust; and the dampness of the room is so great that I suppose the shaly specimens, and those containing any iron pyrites will soon go into decomposition.

Besides these specimens there are a large number of slabs containing fossils lying in the basement rooms, and many similar ones in the yard and in the shed. The grouping of different species, or of a single species over large surfaces, show their habits while in a living state. The same species in rocks of different character, and in different conditions of preservation, have been collected, in order to show the physical conditions under which the fossils became imbedded. These have been collected with much labor and expense, and in a large collection, should be considered very important and interesting specimens. I regret to say, however, that many such specimens have been either partially or entirely destroyed, since they were deposited on the premises.

The collections include the folllowing:

1. One temporary case containing ninety-six drawers filled with specimens from different rocks and groups.

2. Nine similar drawers filled with specimens, not in a case.

Three drawers filled with specimens, belonging to new cases.

Forty-five large drawers in close cases, filled with specimens of the fossils of the lower limestones, Helderberg limestones, Hamilton and Chemung groups.

Fourteen boxes of specimens of fossils and minerals from the Niagara group.

Three boxes of specimens of Hamilton group and Helderberg limestone.

Forty-nine boxes and three kegs of specimens in the shed outside the building.

Nearly all these boxes have been examined, the specimens rearranged, and the boxes labelled with a card indicating the fossils they contain. Owing to exposure and other causes many of these labels have become effaced.

FIFTH ANNUAL REPORT

OF THE

REGENTS OF THE UNIVERSITY,

ON THE

CONDITION OF THE STATE CABINET

OF

NATURAL HISTORY,

AND THE

HISTORICAL AND ANTIQUARIAN COLLECTION

ANNEXED THERETO.

Made to the Assembly, February 2, 1852.

ALBANY:
CHARLES VAN BENTHUYSEN, PRINTER TO THE LEGISLATURE
No. 407 Broadway.
1852.

No. 122.

IN ASSEMBLY, FEB. 2, 1852.

* * *

FIFTH ANNUAL REPORT

Of the Regents of the University, on the condition of the State Cabinet of Natural History, and the Historical and Antiquarian Collection annexed thereto.

To the Hon. Jonas C. Heartt,
Speaker of the Assembly:

Sir,—I have the honor to transmit the Annual Report of the Regents of the University, on the State Cabinet of Natural History and the Historical and Antiquarian Collection annexed thereto.

I have the honor to remain,
Respectfully,
Your ob't serv't,
G. Y. LANSING,
Chancellor.

REGENTS OF THE UNIVERSITY, 1852.

Washington Hunt, Governor, *ex officio.*
Sanford E. Church, Lieut. Governor, *ex officio.*
Henry S. Randall, Secretary of State, *ex officio.*
Gerrit Y. Lansing, Chancellor.
John Greig, Vice-Chancellor.
Gulian C. Verplanck, LL. D.
John K. Paige.
Erastus Corning.
Prosper M. Wetmore.
John L. Graham.
John McLean.
Gideon Hawley, LL. D.
David Buel.
James S. Wadsworth.
John V. L. Pruyn.
Jabez D. Hammond, LL. D.
John L. O'Sullivan.
Robert Campbell.
Rev. Samuel Luckey, D. D.
Robert G. Rankin.
Philip S. Van Rensselaer.
Rev. John N. Campbell, D. D.

T. Romeyn Beck, Secretary.

STANDING COMMITTEE OF THE REGENTS,

Specially charged with the care of the State Cabinet.

1851.

WASHINGTON HUNT, Governor.
CHRISTOPHER MORGAN, Secretary of State.
ROBERT G. RANKIN.
ERASTUS CORNING.
ROBERT CAMPBELL.

JOHN GEBHARD, JR., *Curator.*
JAMES A. HURST, *Taxidermist.*

REPORT.

TO THE LEGISLATURE OF THE STATE OF NEW-YORK:

The Regents of the University

RESPECTFULLY REPORT:

That the State Cabinet of Natural History, under the superintendence of its efficient Curator, continues in a satisfactory condition. All the animals preserved in the collection, have been carefully examined twice during the year just expired, to forestall, if possible, any injury from the moth or other destructive causes. Mr. Hurst, the taxidermist, is specially engaged for this duty, as stated in a previous report.

The additions to the State Cabinet, by purchase, have not been numerous, although they are specially deserving of note. After several years of strenuous effort, sanctioned by previous standing committees of the Board, and consequent unsuccessful outlays of sums of money, by persons authorised to collect the larger animals native to the State, the last winter proved an eminently successful period in attaining the desired object. A male moose, evidently of advanced age and certainly of unusual size, was taken in the northern part of the State, and with much labor and considerable expense, brought to this city, in a good state of preservation. It has been purchased for the collection, in accordance, it may truly be said, with the generally expressed wishes of your predecessors.

A male panther, of large size, has also been bought, with a beautiful specimen of the *Fisher* or *Black Cat* of the New-York

Hunters (*Mustela Canadensis.*) This last is becoming extremely rare, within our borders,—so rare indeed that Dr. Dekay could not obtain a specimen to figure from, and could only give us in his "Zoology of the State of New-York" a drawing of the skull.

As the moose is said to differ in various respects from the descriptions and figures usually given of that animal, and as a plate of the Fisher would seem in a measure necessary, to complete the delineations of animals native to our State, the Regents have engaged from the funds granted to them, lithographic drawings of each. If it be desired to multiply copies of these, any further expense will be limited to that of printing and paper.

A list will be found accompanying this Report of the articles added to the Indian Collection in 1850–51, under the superintendence of Lewis H. Morgan, and which did not appear in the last communication made by the Regents to the Legislature. The illustrated report on these articles, by the last named gentleman, was duly transmitted, but it was not deemed advisable by the Legislature to print the same.

There romain but few of the large animals indigenous to the State, to be obtained, and the prices demanded must necessarily be smaller. The Regents, through the liberality of the Legislature, will be enabled to add these from time to time, from the present annual appropriation.

Accompanying this report, will be found, among other matters, a list of donations made to the State Cabinet during the year 1851. Their variety and value illustrate the interest taken by the public in the collection. But even this is still more strikingly and remarkably witnessed in the crowds that literally, from day to day, constitute its visitors.

By order of the Regents,

G. Y. LANSING, *Chancellor.*

T. Romeyn Beck, *Secretary.*

The following Papers accompany this Report.

A. An account current of receipts and expenditures during 1851

B. Catalogue of the Quadrupeds, Birds, Reptiles, Amphibians, Fishes, &c., added during the year 1851.

C. List of Minerals, Geological Specimens and Fossils, added during the year 1851.

D. Additions to the Historical and Antiquarian collection, by donation and purchase, from January 1st, 1851, to January 1st, 1852.

E. References to various writings on the NATURAL HISTORY OF NEW-YORK, that have appeared during 1851.

F. Description of the means employed to remove the rocks at Hurlgate, by submarine engineering, by E. Meriam, (accompanying a specimen of the rock, presented to the State Cabinet.)

G. A statement of the materials which have been and are to be used in completing the publication of the Natural History received into the Geological Rooms since the 12th day of February, 1851, to January 1, 1852.

(A.)

The Regents of the University, in account current with the appropriations towards preserving and increasing the "State Cabinet of Natural History," and the Historical and Antiquarian Collection, annexed thereto, and for defraying the incidental expenses of the same.

	To balance from previous account (see Senate Doc., 1851, No. 30, p. 15),	$55 51
1851.		
Jan. 6.	To appropriation received from the Comptroller,	250 00
July 14.	To appropriation received from the Comptroller,	800 00
		$1,105 51
1850.	DR.	
Dec. 27.	By cash paid Dr. Asa Fitch, for 295 specimens of insects, native to the State, and naming and arranging the same, (described in the last report,) No. 1,	$80 00
1851.		
Jan. 20.	By cash paid A. F. Chatfield, for 145 specimens of insects collected at Albany and its vicinity, No. 2,	15 00
	By cash paid Jas. Gladding, glazing and painting at State Cabinet, No. 3,	7 96
	By cash paid J. A. Hurst, on account of salary, for preserving specimens, keeping them in good condition, as per contract, from Sept. 1st, 1850, to July 1st, 1851, No. 4,	150 00
	By cash paid contingent expenses of State Cabinet, six accounts with vouchers, No. 5,	6 61
	Amount carried forward,	$259 57

	Amount brought forward,		$259 57
April 3.	By cash paid Dexter & Nelligar, for arsenic, alcohol, camphor, &c., during two years, for State Cabinet, No. 6,		12 02
July 15.	By cash paid J. A. Hurst, for a bull moose, No. 7,		500 00
26.	By cash paid Dr. F. B. Hough, for collecting various specimens of fishes and reptiles in the river St. Lawrence, &c., No. 8,		20 00
Aug. 1.	By cash paid for incidental expenses, six vouchers, No. 9,		3 12
Oct. 6.	By cash paid for incidental expenses, No. 10,		
	W. J. Warner, binding,	$2 75	
	Blank book, visitors,	5 00	
	Expenses on minerals presented by Dr. Conkey,	1 75	9 50
21.	By cash paid, No. 11,		
	John Gebhard, Jr., incidental expenses of the rooms,	$13 94	
	Hood & Tobey, for a microscope,	25 00	
	Weed & Parsons, for printing labels,	6 00	44 94
Dec. 15.	By cash paid Jas. A. Hurst, salary to September 1st, 1851, No. 12,		50 00
	By cash paid Jas. A. Hurst, for various animals preserved, including a male panther, very large, a fisher, very rare, rattlesnake and young, and a black rat, No. 13,		155 00
			$1,054 15
	By balance to new account,		51 36
			$1,105 51

We have examined the above account, and find it correct. The payments have been made by order of the standing committee and are accompanied with proper vouchers.

WASHINGTON HUNT,
CHRISTOPHER MORGAN,
Albany, Dec. 24, 1851. ERASTUS CORNING.

(Copy.)

ALBANY CITY BANK, *Dec.* 19, 1851.

I certify that there is the sum of fifty-one dollars and thirty-six cents standing to the credit of the "State Cabinet of Natural History" on the books of this bank.

(Signed) H. H. MARTIN,
Cashier.

(B.)

CATALOGUE

OF THE

QUADRUPEDS, BIRDS, REPTILES, AMPHIBIANS, FISHES, &C.,

ADDED TO THE

State Cabinet of Natural History,

From January 1, 1851, to January 1, 1852.

BIRDS.

ORDER ACCIPITRES.

Zoology—Part II.

FAMILY FALCONIDÆ.

Haliaetus Leucocephalus, Bald Eagle, - - - - - - p. 5

FAMILY STRIGIDÆ.

Bubo maximus, Eagle Owl, from Norway.

Presented by D. L. Barker, Esq., of Hevingham Hall, Yoxford, Suffolk county, England.

Bubo asio, Little Screech Owl, - - - - - - - - - - - 25

Presented by Dudley Walsh, of Albany.

ORDER GRALLÆ.

FAMILY GRUIDÆ.

Ardea candidissima, White-crested Heron, (female.) - - 221

This specimen was shot by the Hon. John A. Dix at East Hampton, on Long Island, in August, 1836, and is by him presented to the State Cabinet.

REPTILES.

ORDER I. TESTUDINATA.

FAMILY CHELONIDÆ.

	Zoology—Part III.
Chelonura serpentina, Snapping Turtle,	p. 8
Emys picta, The Painted Tortoise,	12
Emys Guttata, The Spotted Tortoise,	13
Emys Insculpta, The Wood Terrapin,	14
Cistuda Carolina, Common Box Tortise,	24

ORDER III. OPHIDIA.

FAMILY COLUBERIDÆ.

Coluber Eximius, The Milk-snake,	p. 38
Tropidonotus dekayi, The Small Brown-snake,	46

FAMILY CROTALIDÆ.

Crotalus durissus, Northern Rattle-snake,	55

Two specimens. The one was taken at Lake George, and presented by S. R. Enders, of Albany. The other was taken near the Schenectady turnpike, four miles west of the city of Albany, and presented by William Wood, of Albany.

CLASS IV. AMPHIBIA.

FAMILY RANIDÆ.

Rana palustris, The Marsh-frog, - - - - - - - - p. 62
Bufo americanus, Common American Toad, - - - - 67
Hyla versicolor, Northern Tree-toad, - - - - - - 71

FISHES.

ORDER V. LOPHOBRANCHII.

FAMILY SYNGNATHIDÆ.

Zoology—Part V.
Syngnathus pechianus, Olive Brown Pipe-Fish, - - - p. 321
Presented by A. S. Doane.

Hippocampus hudsonius, Hudson river Sea Horse, - - - 322
Presented by John Jacobson, of Staten Island.

LIST OF SPECIMENS OF LIVING SALAMANDERS

PRESENTED TO THE

STATE CABINET OF NATURAL HISTORY,

BY S. F. BAIRD, OF WASHINGTON CITY.

---

1. Ambystoma opaca,
   Salamandra fasciata. Dekay.
   Zoology IV. p. 77. Plate XVII., fig. 40.

2. Notophthalmus viridescens,
   Triton millepunctatus. Dekay. IV.
   p. 84. Pl. XV., fig. 34.

3. Notophthalmus miniatus,
   Salamandra symmetrica. Dekay. IV.
   p. 73. Pl. XV., fig. 33.

4. Plethodon glutinosus,
   Salamandra glutinosa. Dekay. IV. 81.
   Pl. XVII.. fig. 42,

5. Plethodon cinereus.

6. Plethodon erythronotus,
   Salamandra erythronota. Dekay. IV.
   Pl. XVI., fig. 38.

7. Desmognathus fuscus,
   Salamandra picta. Dekay. IV. 75.

8. Spelerpes bilineata,
   Salamandra bilineata. Dekay. IV. 79.
   Pl. XXIII., fig. 67.

9. Hemidactylium scutatum.

10. Pseudotriton ruber,

Salamandra rubra. Dekay. IV.
p. 80. Pl. XVII. 43.

The specimens were all caught in the course of an hour, on the farm of Joseph C. Tiffany, Esq., near Coxsackie. The ninth species is now for the first time publicly added to the Fauna of the State.

CATALOGUE OF REPTILES AND FISHES,

FROM ST. LAWRENCE COUNTY, PROCURED FOR THE STATE CABINET OF NATURAL HISTORY,

BY FRANKLIN B. HOUGH, A. M., M. D.

REPTILES.

FAMILY CHELONIDÆ.

CHELONURA SERPENTINA, The Snapping Turtle,
From Gouverneur, St. Lawrence county.

EMYS PICTA, Painted Tortoise. From Fish Creek, near Black Lake, Macomb, St. Lawrence county, (upper shell.)

EMYS INSCULPTA, Wood Terrapin. Rossie, St. Lawrence county. (shell.)

FAMILY COLUBERIDÆ.

COLUBER GETULUS, Chain-snake. Rossie, St. Lawrence county. Of common occurrence in this section of the State.

COLUBER EXIMIUS, Milk-snake. Rossie. This is the most common of our serpents.

COLUBER PUNCTATUS, Ring-Snake. Of rare occurrence in this region. This is the first and only specimen I have found within the last four years. Rossie.

COLUBER VERNALIS, Grass-snake. Rossie. Very common in the latter part of summer. It is seldom seen larger than the specimen sent.

TROPIDONOTUS TÆNIA, Striped-snake. Rossie. Very common.

TROPIDONOTUS DE KAYI, Small Brown-snake. Rossie. This, like the Ring-snake, I consider rare in this section.

AMPHIBIANS.

FAMILY RANIDÆ.

Rana pipiens, Bull-frog. Rossie.

Rana horiconensis, Northern Bull-frog. Black Lake. Rossie.

Rana fontinalis, Spring-frog. Rossie. Very common.

Rana halecina, Shad-frog. Rossie. Very common.

Rana sylvatica, Wood-frog. Rossie. Common. Two specimens, young and adult.

Bufo americanus, Common Toad. Two specimens; a very small young one and an adult. Rossie.

Hyla versicolor, Northern Tree-toad. Rossie. This specimen was kept for some time in order to determine the range of color which it was possible for it to assume. This was found to vary from greenish and light ash-colored to very dark brown, and it was able to assimilate its color to that of the light colored lichen of the beech, and the darker hues of the elm, maple and pine barks with great ease. The time required seemed to vary with the light, but usually occupied less than five minutes.

FAMILY SALAMANDRIDÆ.

Salamandra subviolacea, Violet-colored Salamander. Rossie. Very common under stones and rotten logs, more especially in the spring of the year.

Salamandra rubra, Red Salamander. Common under logs, &c. Rossie. Two specimens; small.

FISHES.

Perca flavescens, American Yellow Perch. Black Lake. This fish is very common in the rivers and small lakes in Northern New-York. An interesting fact relating to this fish has come under my notice, which is worthy of record. Previous to 1843, the waters of Black river and its tributaries were believed to contain none of this species. In that year Messrs. B. Smith, of Greig, and A. Higby, of Turin, Lewis county, procured about thirty specimens from Oneida Lake and placed in a pond adjoining Brantingham Lake, with the design of rearing them. The obstructions placed to prevent their escape having been removed, they soon found their way into all the streams and lakes not obstructed by water falls, with which there is a water communication. And at this time there is no fish more abundant than these in the tributaries of Black river. This result may furnish a valuable suggestion to those who would desire to introduce new species of fish from distant localities.

Numbers of pike and pickerel were also placed with the perch in the pond, but they are believed to have been destroyed by the salmon trout previously inhabiting it, as none have been observed there since.

LUCIOPERCA AMERICANA, Yellow Pike Perch. Commonly known in this section by the single name of *Pike.* Two specimens; one from the Oswegatchie, the other from Black Lake. These and pickerel are caught throughout the year. In winter a hole is cut in the ice, in which hooks are set; the lines being fastened to the short arm of a lever supported by a rod which passes through it. When the lines are drawn down by a fish the long arm of the lever is thrown up as a signal to the fisherman. One person can often attend upon a dozen hooks at a time.

CENTRARCHUS AENEAS, Fresh water Bass,
From Black Lake.

CENTRARCHUS FASCIATUS, Black Fresh water Bass. Commonly called by fishermen *Black Bass.* Black Lake.

POMOTIS VULGARIS, The common Pond Fish. Sun Fish. Black Lake.

PIMELODUS PULLUS, Brown Cat Fish,
Oswegatchie river.

Another cat fish of very common occurrence in this section, being supposed to be new, is here described:—

(Being under the impression that the following species is new, a description has been prepared, which is here offered. Since it was written, opportunities have occurred for examining numerous specimens at various stages of growth, and no marked difference was noted between the young and the full grown.)

PIMELODUS GRACILIS, (new sp.)

Characteristics.—Caudal fin, furcate; body, slender; mouth small and armed with two bands of minute villose teeth. Length nine to fifteen inches.

Description.—Color, dark olive brown above and light ash-colored beneath the sides, presenting intermediate shades. Surface, scaleless and smooth, except upon the head, where it is minutely granular. Lateral line distinct and nearly straight. Head slightly flattened, with a longitudinal depression, extending from a little before the orbits to a point above the extremities of the gills. Barbels eight; two of which are small, erectile, and placed on the anterior margin of the posterior nostrils and reaching the orbits. Anterior nostrils slightly tubular and much depressed. The angles of the mouth furnished with flattened and pointed barbels extending back to the tips of the gills and with a slight rudiment of an accessary bone at their base. Four barbels on the lower lip, the external ones longest, somewhat flattened: the interval between the inner ones much greater than between those on the same side. Mouth small with minute teeth in each jaw and in the throat. Eyes slightly prominent and color of the iris dusky, with a narrow golden margin. Dorsal fin with one spinous ray slightly serrated behind and six branched rays, the first of which is longest and the last sometimes rudimentary. Pectoral fins with one strong spinous ray sharply serrated behind and nine branched rays which regularly diminish in length from the first to the last. The tips of the pectorals when depressed extend beyond the middle of the dorsal, and the spinous rays of these admit of being fixed at the will of the animal, when they might serve as weapons for defence. Ventral fins of eight soft rays, the third of which is longest—somewhat rounded and reaching the base of the anal fin. Anal fin with twenty-two—twenty-four branched rays—long and sub-equal. Caudal fin of twenty-two branched rays, furcate. Adipose fin half an inch in length and extending up the back in a ridge about one inch. Vent, midway between the ventral and anal fins, with an urinary meatus behind it, appearing as a small tubercle. Base of the fins becoming reddish after death from infiltration. Length nine to fifteen inches. Fin rays, D. 1·6; P. 1·9; V. 8; A. 22–24; C. 22.

This species occurs in the Oswegatchie, Indian, and other rivers tributary to the St. Lawrence, and in several of the smaller lakes of St. Lawrence and Jefferson counties. Its neat, slender form, small mouth and furcate tail distinguish it from other species which occur in these waters and from any that are described either as proper or extralimital in the Natural History of this State. It is said by fishermen that it did not occur in the Oswegatchie river previous to 1832. It is distinguished by no other local name but simply that of *common catfish* in the localities where it occurs, and is by most considered equal to the trout as an article of food.

CATOSTOMUS AUREOLUS, Mullet Sucker. Oswegatchie river. Common in the lake and large streams of St. Lawrence co.

LEUCISCUS ATRONASUS, Black-nosed Dace, From a small stream in Rossie, where it is common.

LEUCISCUS NITIDUS, Shining Dace. Oswegatchie river, where it abounds. It is commonly called by no name except *Dace.*

ESOX RETICULATUS, The common Pickerel. Common in Black Lake, St. Lawrence river, &c., where it at times attains a weight of fifteen or eighteen pounds.

HYODON TERGISUS, River Moon-eye. Black Lake. From the silvery reflection of this fish it has received the local and improper name of *White fish.*

LEPIDOSTEUS BISON, Buffalo Bony Pike. Known here only by the name of *Bill fish.* It abounds in Black Lake, and at certain seasons they appear along the shores and stony points in immense numbers. The proper spawning season of this fish in Black Lake is about the middle of June. At this season they appear in the greatest numbers in companies of four and five. Being objects of no value and very annoying to fishermen, they are destroyed upon all occasions and in great numbers. Pickerel and other fish very often suffer from the bite of these voracious and unsightly fish. They have been taken five feet in length in Black Lake.

ANGUILLA TENUIROSTRA, Common Eel. Oswegatchie river.

From JOSEPH RUSSEL, of Albany.

EGG OF THE SHARK.

From BENJAMIN KNOWER, of Onondaga Hill, Onondaga county.

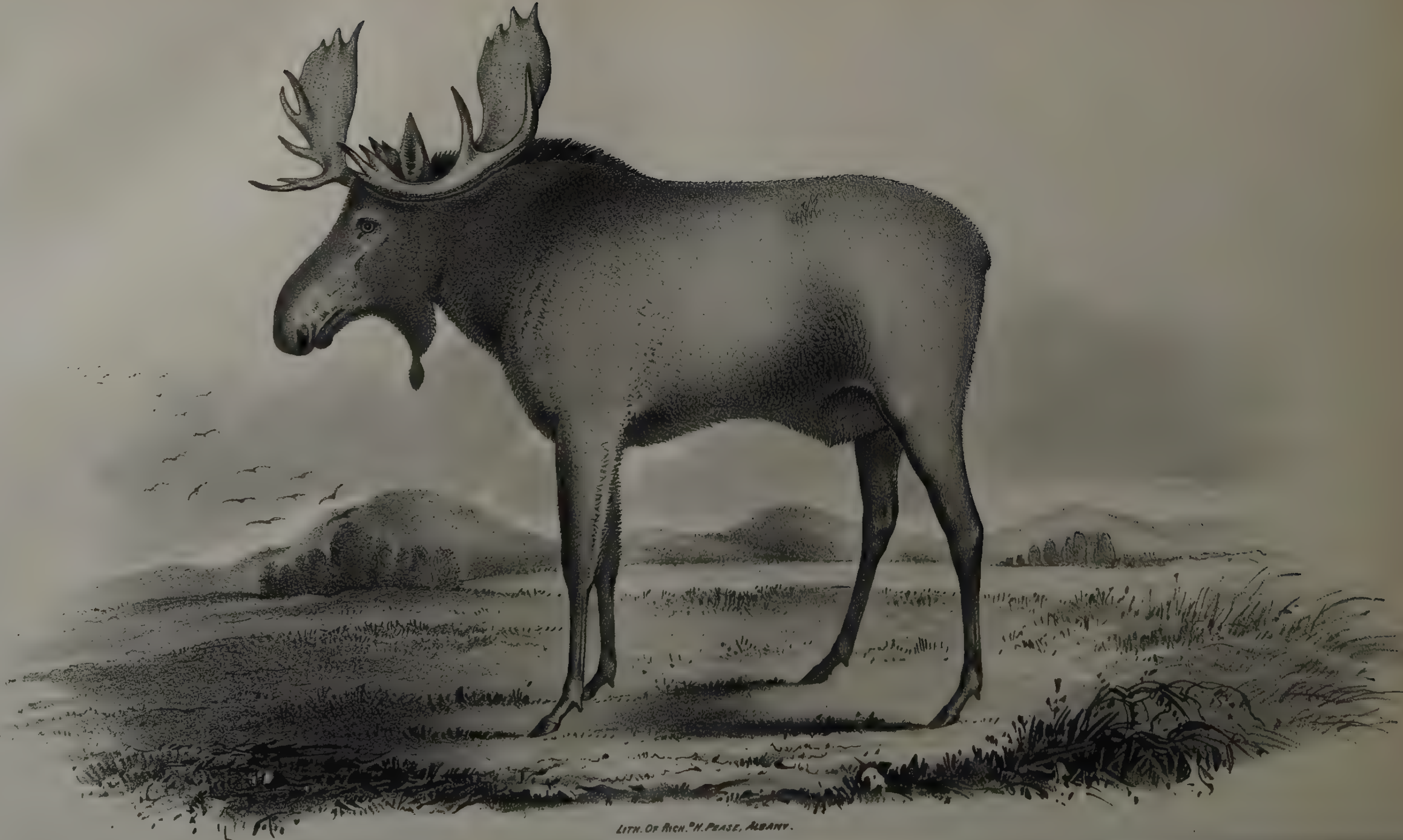
A SEA SHELL (Cassis), from the Pacific Ocean.

TORTOISE SHELL, from the Pacific Ocean.

A specimen of CORAL, from the Pacific Ocean.

From ABEL FRENCH, Esq., of Albany.

A BALL OF HAIR, from the stomach of an animal.



LITH. OF RICH.^{D} H. PEASE, ALBANY.

CERIUS ALCES

THE MOOSE.

CERVUS ALCES.

The accompanying lithograph is after a drawing by Swinton, from the grand specimen in the State Cabinet, which was killed in the town of Ohio, Herkimer county, N. Y., in the month of January, 1851, by hunters in the employ of Mr. James A. Hurst, State Taxidermist, and was by him set up and prepared for the State.

The dimensions of the animal are as follows:

	Feet.	Inches.
Length from point of nose to root of tail,..........	10	2
Length of tail,..................................		8
Height at shoulder,..............................	6	3

The following account of the moose is copied from De Kay's Zoology of New-York:

In the summer, the moose frequents the neighborhood of lakes and streams, frequently swimming in the water, and feeding upon aquatic plants, among which the roots of the pond lily appear to be most greedily devoured. It also feeds upon the high coarse grasses, twigs of trees, more especially of the striped maple, (*Acer striatum*, Pursh,) which has consequently received the name of *Moose-wood*. It likewise peels old trees, and feeds upon the bark. Period of gestation, nine months; and it produces one or two at a birth, in April or May.

In winter, the moose herd together for mutual protection, selecting hilly woods, and feeding exclusively on young twigs and the moss and bark of trees. These herds consist of a bull, a cow and two calves; sometimes four or five cows, but this is more rare. Occasionally several of these herds unite, and when the snow lies deep, they will tread down a space of several acres, which are termed by the hunters *moose-yards*. At this season, and in such situations, the hunter attacks them most successfully.

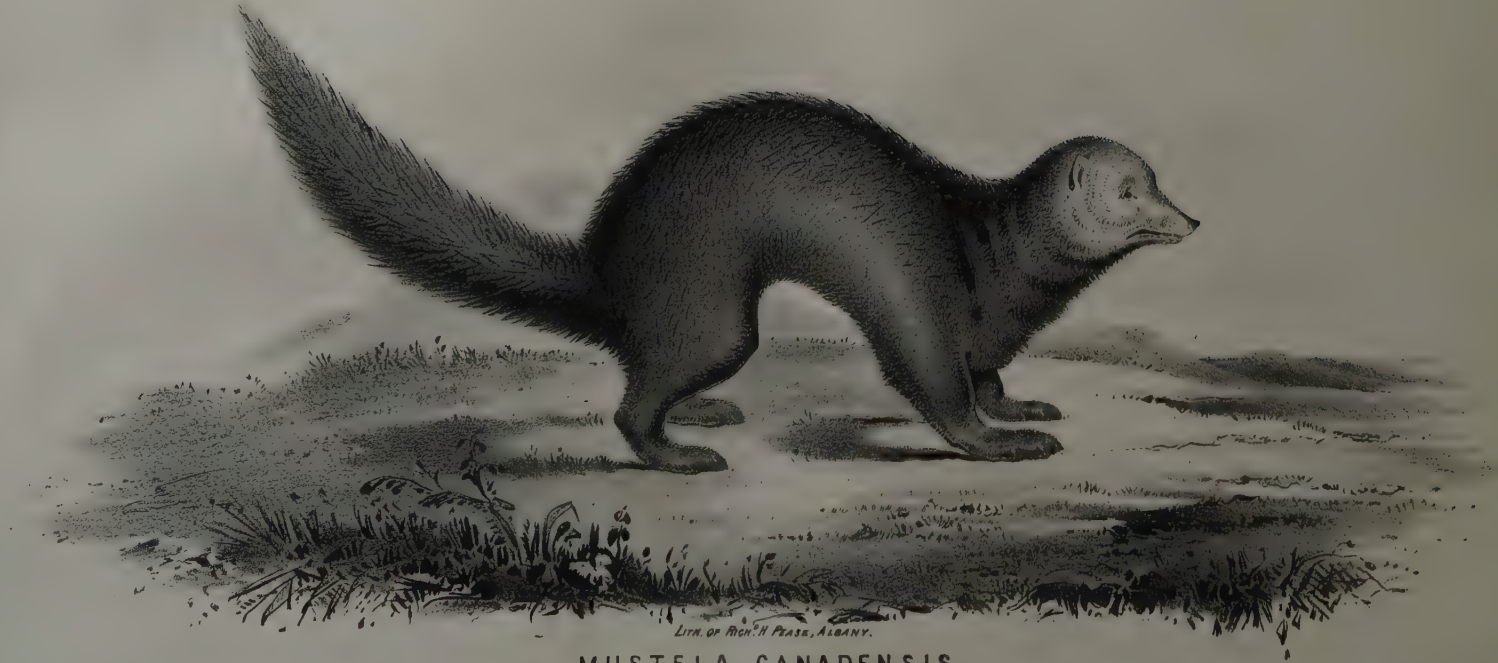
They are yet numerous in the unsettled portions of the State, in the counties of Essex, Herkimer, Hamilton, Franklin, Lewis and Warren; and since the gradual removal of the Indians, they are now (1841) believed to be on the increase. They have been extirpated from Massachusetts, but are still found in Maine, Vermont and New Hampshire. Godman has erroneously stated that they are not known south of Maine; and this error has been magnified by subsequent copyists, who assert that it is not found in the State of Maine. It existed formerly much nearer the Atlantic coast; for we learn from Dunlap, that a pair of moose were once sent from Fisher's island to England.

The moose is a timid, wary animal; and its senses of hearing and smelling are so acute, that it requires the greatest caution on the part of the hunter to approach it. During an expedition of several weeks through the counties of Hamilton, Franklin and Essex, although their tracks were almost daily visible, yet we never had an opportunity of shooting a single individual.

The moose furnishes an excellent material from its hide for moccasins and snow-shoes. The best skin is obtained from the bull moose in October, and usually sells for four dollars. They were formerly so numerous about Raquet lake, that the Indians and French Canadians resorted thither to obtain their hides for this purpose; and hence we have the origin of the name of that lake, the word *raquet*, meaning *snow-shoes*. They still exist in its neighborhood.

The moose, when pursued, trots off with great rapidity, but in an awkward manner, its hoofs at the same time making a cracking noise. At this gait it soon leaves the hunter far behind, stepping with great ease over fallen timber of the largest size. When hard pressed by the hunters on snow-shoes, if it breaks up into a gallop, they are sure of overtaking it soon. Its flesh is much esteemed, and the meat of the young can scarcely be distinguished from the best veal. The nose and tongue are particularly considered great dainties. The moose, when taken young, is easily domesticated, and has been used in this State for draught. I am not aware, however, that they possess any advantage for such purposes over our common beasts of burden; and their preference for twigs and bark of trees, instead of grasses, would render them not very desirable to the farmer who cared for the growth of his plantation.

The moose inhabits the northern parts of both continents. In America, they range to the Arctic Sea; and I am enabled to state, from personal knowledge, that their extreme southern limit along the Atlantic coast is 43° 30′ in the State of New-York.



Lith. of Richd. H Pease, Albany.

MUSTELA CANADENSIS.

FISHER or BLACK CAT.

THE FISHER.

MUSTELA CANADENSIS.

In the "Zoology" of the State, the skull, only, of the fisher is figured; Dr. Dekay not being able at the time of the publication, to procure a perfect specimen. The Regents of the University, for the purpose of supplying this defect in the illustrations of the Mammalia, directed a drawing and engraving to be made from the beautiful specimen in the State Cabinet, which was taken in the town of Ohio, Herkimer county, N. Y., in the month of January, 1851. (See figure on the preceding page.)

The following remarks on the fisher are copied from Dekay's Zoology of New-York:

The fisher or black cat of our hunters, is a large and powerful animal, standing nearly a foot from the ground. It was formerly very abundant in this State, but is now confined to thinly settled northern districts. Twenty years ago they were numerous in the western part of the State, where they are now scarcely ever seen. It is a nocturnal species, and lives chiefly on the smaller quadrupeds, but also devours frogs, fish and serpents. It climbs trees with great ease, and takes up its abode in the trunk of a tree. It appears to prefer marshy wooded swamps, and the vicinity of lakes and water-courses.

The name of *fisher*, which has been censured as not applicable to this animal, is, however, that by which it is best known, and which it has received from its characteristic habits. Richardson states that it feeds on the hoards of frozen fish stored up by the residents. We are informed by a person who resided many years near Lake Ontario, where the fisher was then common, that the name was derived from its singular fondness for the fish used to bait traps. The hunters were in the practice of soaking their fish over night, and they were frequently carried off by the fisher whose well known tracks were seen in the vicinity. In Hamilton county it is still numerous and troublesome. The hunters there have assured me that they have known a fisher to destroy twelve out of thirteen traps in a line of not more than fourteen miles in length. It brings forth two young annually. Its geographical range is included between the fortieth and seventieth parallels of latitude, extending across the continent.

(C.)

CATALOGUE

OF

MINERALS, GEOLOGICAL SPECIMENS AND FOSSILS

ADDED TO THE

State Cabinet of Natural History,

FROM JANUARY 1, 1851, TO JANUARY 1, 1852.

MINERALS.

DONATIONS

To the State Cabinet of Natural History, during 1851.

From Hamilton Fish, late Governor of the State of New-York.

(Governor Fish received the following as a present from Governor Floyd, of Virginia. He desired to mark his appreciation of the donation, by placing it in the "State Cabinet of Natural History.")

1. *Native Rock Salt*, found in sinking the Salt Wells of Washington and Smyth counties, Virginia. (Two specimens.)
2. *Table, or Dairy Salt*, made at the Salt Wells of Washington and Smyth counties, Virginia.
3. *Common Salt*, made at the Salt Wells of Washington and Smyth counties, Virginia.
4. *Coarse Salt*, made at the Salt Wells of Washington and Smyth counties, Virginia.
5. *Gypsum*, from Washington and Smyth counties, Virginia. (Three varieties.)
6. *Primitive Marble*, from Rockbridge county, Virginia.
7. *Iron Ore*, (Limonite ?) From Graham's Works in Wythe county, Virginia. Also found throughout South-western Virginia and East Tennessee. (Two specimens.)
8. *Iron Ore*, ( ) From Sharpe's Iron Works, Washington county, Virginia.
9. *Lead Ore*, from Smyth county, Virginia. (Two specimens.)

10. *Lead Ore*, from Albemarle and Wilson counties, Virginia. (Two specimens.)

11 *Lead Ore*, ( ) From Wythe county, Virginia. (Five specimens.)

12. *Crystalized Quartz*, from Carroll county, Virginia. (Three specimens.)

13. *Copper Ore*, (copper pyrites?) from Grayson county, Virginia. (Three specimens.)

14. *Cannel Coal*, from Kenhawa county, Virginia. (Three specimens.)

15. *Semi-bituminous Coal*, from Wythe county, Virginia.

From JOHN H. SCATTERWOOD, of Albany.

A specimen of SULPHURET OF IRON, from Ohio.

From JAMES H. SILL, of Argyle, Washington county.

A specimen of GRANITE, containing molybdenite, broken from a boulder, found in North Argyle, Washington county.

From HOOD & TOBEY, of Albany.

A specimen of native CINNABAR, (red sulphuret of mercury,) from California.

From PETER OBERIST, of Albany.

A specimen of SLAG, from the Crane Iron Ore.

From JULIUS RHOADES, Esq., of Albany.

Specimens of CALCAREOUS TUFA, (petrified moss and wood,) from Marcellus, Onondaga county.

From DAVID NOBLE, 2d, of Johnsburgh.

Two specimens of GRAPHITE, from the farm of A. Noble, Johnsburgh, Warren county.

From D. A. HAWLEY, of Albany.

Two specimens of IRON ORE, from the south-eastern part of Putnam county, N. Y.

From EDWARD MURRAY, of West Troy.

A specimen of MARBLE, from Ulster county, N. Y.

From J. F. AMES, of Manchester, N. H.

A QUARTZ CRYSTAL, from Canterbury, N. H.

From Dr. J. S. CONKEY, of Antwerp, Jefferson county, N. Y.

A specimen of MILLERITE, (sulphuret of nickel,) from Antwerp, Jefferson county.

A specimen of CACOXENITE, (chalcodite of Shepard,) Antwerp, Jefferson county.

A specimen of SPATHIC IRON, from Sterling Iron Mine, Antwerp, Jefferson county.

Presented by PIERRE VAN CORTLANDT.

A specimen of IRON, made from the iron ore discovered at Anthony's Nose, in the Highlands, in blasting for the tunnel in the Hudson River Railroad.

From LEONARD WILBUR, of Wales, Erie county, N. Y.

A specimen of SEPTARIA, found on his farm in Wales, Erie Co., N. Y.

From RUSSELL COLE, of Troy.

A specimen of CALIFORNIA QUARTZ.

A specimen of PEBBLES, cemented together by iron, which usually overlays the gold bearing sand.

From JOHN J. MOAK, of New Scotland, Albany county.

Several stems of ENCRINITES, from New Scotland; also,

Specimens of INDURATED CLAY.

From MICHAEL CLARKE, of Albany.

A water-worn PEBBLE, resembling a potato.

From the Hon. E. T. SMITH, of Suffolk county, N. Y.

Several PEBBLES from the shores of Long Island.

Specimen of SAND from the beach of Long Island.

From BENJAMIN KNOWER, of Onondaga Hill, Onondaga Co.

A specimen of COPPER ORE, in quartz.

LIST OF MINERALS

FURNISHED FOR THE

STATE CABINET OF NATURAL HISTORY,

BY FRANKLIN B. HOUGH, M. D.,

OF SOMERVILLE, ST. LAWRENCE COUNTY, N. Y.

SPECULAR IRON ORE, from an island in Muscalunge lake, Theresa, Jefferson county, where it has been wrought to some extent; but the great quantities of iron pyrites with which it is associated, will greatly impair if not entirely destroy its value.

SPECULAR ORE WITH IRON PYRITES. Locality of preceding.

IRON PYRITES. Do.

SULPHATE OF BARYTES. Do.

MALACHITE. Do.

DYSYNTRIBITE. Do.

SPONGY QUARTZ. Locality of preceding. This is formed by the removal by decomposition of sulphuret of iron from the quartz rock in which it is disseminated. The specimen exhibits every stage of the process.

GALENA. Macomb, St. Lawrence county.

LABRADORITE, from a large boulder on the shore of the St. Lawrence, near Ogdensburgh.

DYSYNTRIBITE. A new species described in the proceedings of the American Association, New Haven, 1850, p. 311.

This name (suggested by the difficulty with which it is pulverized in a mortar,) has been given by Prof. Charles U. Shepard, of Amherst College, to the variegated serpentine almost invariably associated with the red specular iron ore of Northern New-York.

So uniform is this association that I have become accustomed to regard it as a reliable indication of ore.

This mineral is referred to in the annual and final reports of the geological survey of this State in the following places:—Fourth annual report, p. 74, where it is called serpentine. "It occurs near the natural bridge in Lewis county, and is susceptible of a fine polish." This is the only locality hitherto noticed in which this mineral is of sufficient solidity in mass, to be wrought into articles of utility.

Final Report of 2d district, p. 68, mentioned as serpentine, accompanying iron ore.

Do. pp. 71, 94, 95, where it is noticed as an associate of iron ore.

Do. p. 96, where it is described as serpentine breccia.

Do. p. 376, mentioned as serpentine associated with iron ore at the Shurtliff ore bed in the town of Philadelphia, Jefferson county.

Do. p. 377, also spoken of as an associate of ore at the Sterling iron mine, Antwerp, Jefferson county.

Mineralogical report, p. 274, Lewis county, mentioned as serpentine.

Third Annual Report of Regents on State Cabinet, p. 31, where it is named "Brecciated black Serpentine."

Houghite, 3 specimens. This is a new species, described by Prof. C. U. Shepard, in the Transactions of the American Association, New-Haven, 1850, page 314. It occurs in Gouverneur, St. Lawrence co., near the southwestern edge of the town, one and a half miles north of Somerville village. Its associates are serpentine in large crystals imperfectly developed,—phlogopite of a reddish yellow cast, and spinelle often in small brilliant crystals of a reddish color, or more rarely an inch on a side. Dolomite, chondrodite, and blue amorphous spinelle occur in the vicinity.

The rock in which these occur is white limestone, rising in this place but a slight distance above the general level, and the deposite is apparently limited to a few feet in extent.

From observations made since the description was published, there is reason to believe that this mineral is pseudomorphous of spinelle. It is, however, but very rarely crystalized, and occurs usually in nodular masses, with a white or pearly grey color externally and reddish brown within. A crystal of spinelle has been noticed in some instances as a nucleus to these globules. This locality is mentioned in the State Report on Mineralogy as furnishing serpentine and mica.

Zircon, having the prevailing form of the following figure, occurs one mile from Rossie village, St. Lawrence county. From its occurrence at different localities in the same range for three or four miles, there may be reason to hope that it will hereafter be detected in considerable quantities. Hitherto it has been found only in detached crystals, sparingly scattered through white limestone, and associated with apatite, graphite, loxoclase, &c.

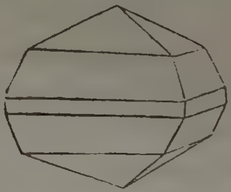


Figure 1.

The form here represented is not figured in the mineralogical report of Prof. Lewis C. Beck, and is an interesting addition to the crystalline forms of this mineral. It seldom occurs with the symmetry of the figure, but is usually greatly distorted by the extension of some of the planes at the expense of the others. The intervening prism is at times obliterated. The terminal planes are usually the most brilliant, while those which separate these from the prismatic portion have a dull wrinkled surface, with occasional striæ in the direction of the natural cleavage. Specimens of these have been placed in the State Cabinet.

SULPHATE OF BARYTES. Limpid crystals of this mineral, from one line to half an inch in extent, have been noticed associated with calcite and spathic iron, at the iron mines in Rossie, St. Lawrence county. They are of especial interest, as representing crystalline forms not hitherto attributed to this State. The following figures exhibit the forms observed at this locality.

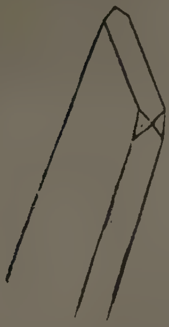


Fig 2.

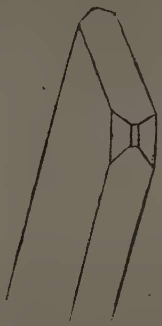


Fig 3.

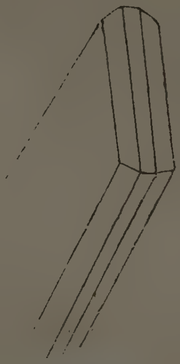


Fig 4.

At times, the thickness of the tabular crystals greatly exceeds their length, and they become rectangular prisms, with flat summits and bevelled edges.

Heavy spar is among the rarest of the associates of specular iron in Northern New-York, although it occurs among the white limestone at some localities, in great abundance.

F. B. HOUGH.

(D.)

ADDITIONS

TO THE

HISTORICAL AND ANTIQUARIAN COLLECTION,

IN THE

State Cabinet of Natural History,

FROM JANUARY 1, 1851, TO JANUARY 1, 1852.

DONATIONS.

From Lewis McMullen Selkirk, of Bethlehem, Albany county.

An Indian chert arrow head, (large.) Found in Bethlehem, Albany co.

From Prof. Ebenezer Emmons, of Albany.

A fragment of Indian pottery. Found on the banks of the Hudson river, six miles above the High Falls.

This fragment, which is two inches long and one and a half wide, represents the head and about one half of the shell of a tortoise. It appears to have been a portion of a pipe.

From Ferdinand Wiel, of Albany.

A specimen of cloth made of the bark of the bread fruit tree, by the natives of one of the islands in the Pacific ocean.

From James H. Sill, of Washington co.

A piece of one of the oak trees cut down in the town of Argyle, Washington county, in the year 1797, for the purpose of constructing a navy, under the administration of John Adams.

The following communication of Mr. Sill, accompanies the specimen:

"I have taken the liberty to send to the State Cabinet of Natural History a piece of oak taken from a tree which grew in the town of Argyle, Washington county, N. Y., and was cut down in the year 1797, under the administration of John Adams, to be used in building a navy.

My uncle, David Sill, informs me, that there were at that time two gigantic oaks which grew near together, that were cut for the above named purpose. One of them was hewed, and afterwards drawn by fifteen yoke of oxen, with the forward end elevated on a huge wood sled. When they had got out of the woods, a "stump speech" was delivered by one of the party from the forward end of the stick, as a stage. After passing the bottle around, according to the custom of the times, they moved on with shouts of overflowing patriotism that almost seemed to inspire even the dull ox with more than his ordinary ambition, and thus delivered the stick at a place then called Dumont's Ferry, a short distance below Fort Miller.

The other tree, of which the piece presented to the State Cabinet is a part, was cut and scored on two sides, and partly hewed; but owing to some small defect it was abandoned. About twelve years subsequent to that time, it was split into rails and laid up into fence. Only a few of the rails now remain, and it was with some trouble that I succeeded in obtaining a few pieces which bear the marks of the axes of those who scored and partly hewed the stick; one of which is seen on the piece herewith presented.

JAMES H. SILL.

From the Hon. E. T. Smith, of Suffolk county, N. Y.

Two Indian arrow heads, made of greasy quartz. One do, made of yellow jasper.

From A. Heyer Brown, of Albany.

A stone axe, eleven inches in length. This relic was found several feet below the surface, in digging a well at Poughkeepsie, Dutchess county.

From Mrs. Mercy Valentine, of Albany.

A military cap plate, of the Revolution. *Design.*—The American Eagle with extended wings, surmounted by thirteen stars. *Motto*—"Unity is Strength," 1776.

From Abraham J. Warner, of Richmondville Schoharie co.

An ancient mill-stone, plowed up in the town of Conesville, Schoharie county, in the summer of 1850. The stone is graywacke, twenty inches in diameter and two inches thick, and was used in the early settlement of the country in a hand-mill.

From the Rev. M. S. Goodale, of Amsterdam, Montgomery co.

A camp knife, dug up by James Stewart, Esq., of Guy Park, formerly the residence of Sir Guy Johnson, of tory memory in the days of the Revolution. The knife is a relic of those times.

From Theodore Mills, of Cherry Valley, Ashtabula, co., Ohio.

Stone chisel, made of greenstone.

Stone deer-skin dresser, made of greenstone.

Stone axe.

White chert arrowhead.

The following communication accompanies the relics.

"*To the Regents of the University of the State of New-York:*

"Gent.—Please accept the Indian hatchet, arrow and knife, which are herewith presented to you.

"I picked them up on my farm in the Cherry Valley, Ashtabula county, Ohio.

"Deeming all Indian implements acceptable as presents to the Geological Hall, I take the liberty of presenting them.

THEODORE MILLS."

Cherry Valley, Ohio, June 20, 1851.

From the Rev. John N. Campbell, D. D., of Albany.

A cup, turned from one of the red cedar gate posts of Fort William Henry. The gate posts were placed in the ground A. D. 1755, and removed A. D. 1837. These posts are now in the State Cabinet.

A bead basket, made and presented by Peter Le Page, jr., one of the pupils belonging to the New-York Institute for the Blind.

A specimen of "Pot Rock," from Hurl Gate channel, near New-York. Procured and forwarded by Mons. Maillefert, the engineer employed in removing the obstructions to navigation in Hurl Gate.

A piece of copper sheeting, taken from Way's Reef in Hurl Gate channel. Large quantities of this were obtained while removing the reefs in Hurl Gate, which had been stripped from vessels which had struck against them at different times. Presented by Mons. MAILLEFERT, engineer, &c.

From PETER G. BRADT, of Bethlehem, Albany co.

A STONE CHISEL. Also, two regularly rounded PEBBLES.

From W. A. HOTCHKISS, of Albany.

An IRON KEY, taken from the Halls of the Montezumas, Mexico, on the 12th day of June, 1848, and which originally belonged to the Palace Garden gate.

From HENRY B. TODD, of Mott Haven, Westchester co. N. Y.

A part of the SHOT RACK of the British frigate Hussar, with four cannon balls. Also a musket, and a bayonet and scabbard.

"The frigate Hussar, was lost December 15th, 1780, off Stoney Island, on Westchester county shore, having struck Pot Rock, in Hurl Gate. She was loaded with troops, ammunition, and supplies for the British army in this country. The troops and crew had barely time to reach shore, before she sunk, with seventy American prisoners, who were in irons and could not be rescued. These relics were obtained by Messrs. Pratt & Howe, in the month of August, 1851, by the aid of Taylor's sub-marine armour, after having been buried over seventy years. The wreck lies in water seventy-six feet deep, at high water."

From BENJAMIN KNOWER, of Onondaga Hill, Onondaga co.

A clay DRINKING CUP, in the form of a duck, from the Sandwich Islands. Also, a HEAD DRESS, made of sea shells.

SCHEDULE OF ARTICLES

Obtained from Indians residing in western New-York and on Grand River in Upper Canada, being the product of their own handicraft and manufacture, for the Historical and Antiquarian collection in the State Cabinet of Natural History, by Lewis H. Morgan, Esq., of Rochester.

The following extract is taken from Mr. Morgan's report to the Regents of the University in relation to the Indian articles mentioned in the schedule.

"By a reference to the schedule, it will be perceived that the additions the present year are at least equal in variety and interest with those of the preceding. Some of them are of the same name and general character; but in such cases the article itself will be found to be either a more perfect specimen, different in some essential particular, or from some other locality. A portion of the articles were obtained of the Mohawks, Onondagas, Cayugas, Senecas and Tuscaroras, who, to the number of two thousand four hundred and fifty, now reside upon a large reserve secured to them by the British government on Grand River in the Niagara peninsula, in Upper Canada. But the residue and the chief portion were obtained from the Senecas in the western part of the State."

1.	Gä-däs-hä.	SHEAF for carrying arrows.	
2.	Gä-je-wä.	WAR CLUB, with ball head.	
3.	Gä-such-tä Ote-ko-ä.	BELT OF WAMPUM.	
4.	Ote-ko-ä.	STRING OF WAMPUM.	
5.	Ah-so-quä-tä.	STONE PIPE.	
6.	Da-gä-yä-sont.	SILVER CROSS,	8 inches by 5.
7.	do.	do.	6 inches by 4.
8.	do.	do.	3 inches by 1½. 2 specimens
9.	Au-ne-as-gä.	SILVER BROACH,	4 inches diameter.
10.	do.	do.	3 inches diameter.
11.	do.	do	1½ inches diameter. There are in all 13 broaches of various sizes.
12.	do.		
13.	do.		
14.	Au-ne-ä-hus-hä.	FINGER RING.	4 specimens.

15.	Ah-was-hă.	Ear ring.	1 pair.
16.	Dă-yase-ta-hos-ta.	Silver hat band.	
17.	Ont-wìs-tä-ne-un-dä-quä.	Silver Beads.	(Long.)
18.	O-wìs-tä-no-o O-sta-o-quä.	Round Silver Beads.	(Variety.)
19.	Gă-ose-hă.	Baby frame.	
20.	Gä-swä-hos-hä.	Baby frame belt.	
21.	Gă-nose-gă.	Baby frame belt.	
22.	do	do	
23.	Da-ya-he-gwä-hus-ta.	Hat band of broaches.	
24.	Gä-yä-ah.	Satchel.	
25.	Gä-ya-äh.	Work Bag.	
26.	Ya-wa-o-dä-qua.	Pin Cushion.	(2 spec.)
27.	Gä-kä-ah.	Kilt.	(Made of fawn skin.)
28.	Got-ko-on-dä Gise-hă.	Deer skin leggin.	
29.	Da-yunt-wä-hos-tä.	Deer skin waist belt.	
30.	Yunt-ka.to-dā-tä.	Deer skin shoulder belt.	
31.	Ah-tä-quä-o-weh.	Moccasin.	
32.	do	do	
33.	do	do	
34.		Hair ornament.	
35.		Shot pouch.	
36.	Gät-go-ne-as-heh.	Hommony blade.	(2 spec.)
37.	do	do	(A chain cut on the end of the handle.)
38.	Ya-ă-go-jen-ta-quä.	Bread turner.	
39.	Ah-do-gwä-seh.	Wooden ladle.	
40.	do	do	(2 specimens.)
41.	do	do	
42.	Ah-do-gwä-seh.	Bark ladle.	
43.	Ah-do gwä-seh.	Wooden Spoon.	
44.	Gă-na-quă.	Bark barrel.	(3 sizes.)
45.	Gä-o-wä.	Bark tray.	(6 sizes.)
46.	Gä-oo-wä.	Bark sap tub.	
47.	Gă-te-as-hă.	Glass beads.	
48.	Gă no-sä.	Conch shell breast plate.	
49.	Ah-dä-dis hă.	Cane.	(2 specimens.)
50.	Ah-so-quä-tä.	Pipe, made of Missouri stone.	
51.	do	do made of black stone.	
52.	do	do made of Nodule.	

53. Ah-so-quä-tä. Pipe, made of wood and lead.
54. Gä-gä, ne-as-heh. Belt and knife.
55. Gus-dä-wah-sä. Turtle shell rattle.
56. do do
57. O-no-gä Gus-da-wah-sa. Horn rattle.
58. Gus-to-weh. Head dress.
59. Gä-wä. Moccasin awl.
60. Bunch of sumac.
61. O-yeh-quä-ä-weh. Indian tobacco.
62. Gìs-tät-he-o Gä-yä-ah. Fawn skin bag.
63. Gus-dä-wa-sä Yen che-no-hos-ta. Knee rattle, of deer hoofs.
64. Spear used in the war of 1812.
65. Gä-ne-a-ga-o-dus-ha. War club.
66. Ya-o-dä-was-tä. Indian flute. (2 specimens.)
67. Wä-a-no. Indian bow.
68. Gä-ne-ah. Ball bat.
69. Gä-no. Arrow. (Pointed with deer's horn.)
70. Gä-no. Feathered arrows. (18 specimens in sheaf.)
71. O-dä-da-one-dus-tä. Eye showerer.
72. Yun-ga-sa. Tobacco pouch, made of the foot and leg of the snapping turtle.
73. Gä-go-sä. False face.
74. O-ä-ta-ose kä. Moose hair burden strap.
75. Gus-hä-ah. Moose hair and bark burden strap.
76. Gus-hä-ah. Burden strap, (bark thread and worsted.)
77. Gus-hä-ah. do (bark with moose hair figures.)
78. Gä-te-äs hă Gä-a-o-tä-ges. Grass shoulder ornament.
79. Yout-kä-do-quä. Basket fish net.
80. Husk moccasins, (one pair.)
81. Gä-a-sken-dä. Bark rope—made of basswood filaments.
82. do do 2 specimens from Tonawanda.
83. Ose-gă. Skein of slippery elm thread.
84. Ose-gă. do (colored.)
85. do Twisted into strings.
86. Ose-gă. Strips of slippery elm bark.
87. O-să. Skein of basswood filaments.
88. O-sä. Strips of basswood bark.
89. Go-yo-ga-ace. Finger catcher.

89½. Bird trap for catching quails.
90. Gus-hā-ah. Deer hair burden strap.
90½ Gus-hä-ah. Basswood burden strap.
91. Ne-us-tase-ah. Basket Sieve.
92. Gase-hă. Covered basket.
93. O-gä-kä-ah. Open-work basket.
94. Ta-gase-hă. Market basket.
95. Gä-geh-dä. Javelin, or shooting stick.
96. Ah-de-gwas-hă. Hominy blade.
97. Paddles. (6 specimens.)
98. Yun-des-ho-yon-dä-gwat-hä. Pop corn sieve.
99. An-ne-us-gă. Silver Broach. (9 specimens on a card.)
100. An-ne-us-gă. do (20 specimens on a card—small.)
101. Gä-ka-ah. Skirt.
102. Gise-hă. Leggin for female. (1 pair.)
103. Ah-de-a-dä-we-să. Female over-dress.
103½ E-yose. Broadcloth blanket.
104. O-sta-o-quä. Bead necklace.
105. Gä-ka-ah. Skirt for female.
106. Gise-hă. Leggin for female. (1 pair.)
107. Ah-de-a-dä-we-să. Over-dress for child.
108. Yen-nis-ho-quä-hos-ta. Wristbands of beads. (1 pair.)
109. O-ha-dä. Porcupine quills.
110. Deer's hair, used for making burden straps, &c.
111. Da-ya-no-tï-yen-dä-quä. Snow boat.
112. Gä-wä-sä. Snow snake. (5 specimens.)
113. Gä-ne-ko-wä-ah. Burden frame.
114. Gä-no-sote. Bark house.
115. Gä-snä Gä-o-no. Bark canoe.

(E.)

References to various Writings relating to the NATURAL HISTORY of New-York, that have appeared during 1851.

ZOOLOGY.

Boston Journal of Natural History.

Vols. 4, 5 and 6. Hentz's Description of the Araneides of the United States.

Vol. 6, p. 247. Observations on the Fishes of Nova Scotia and Labrador, with descriptions of new species. By Horatio R. Storer.

Silliman's Journal. New Series.

Vol. 11, p. 351. Infusoria in Hudson river ice, found by Professor Bailey, of West Point.

Journal of the Academy of Natural Sciences, of Philadelphia. New Series. Vol. 2. (4to.)

Page 99, 139. An attempt to classify the Longicora Coleoptera of the part of America, north of Mexico. By John L Le Conte, M. D.

Proceedings of the Academy of Natural Sciences, of Philadelphia.

Vol. 5, p. 310. Synopsis of the species of Donacia (Fabr) inhabiting the United States. By John L. Le Conte, M. D.

Page 331. Synopsis of the Lampyrides of temperate North America. By John L. Le Conte, M. D.

Annals of the Lyceum of Natural History of New-York.

Vol. 5, p. 68. Description of the Selene Argentea of Lacèpedé, a fish whose existence has been doubted. By J. Carson Brevoort.

MINERALOGY, GEOLOGY AND PALÆNTOLOGY.

Quarterly Journal of the Geological Society of London.

Vol. 7, p. 212. Sir John Richardson on some points of the Physical Geography of North America, in connection with its physical structure.

p. 215. Dr. John J. Bigsby on the Erratics of Canada.

p. 238. Sir Charles Lyell on Fossil Rain Marks of the recent Triassic and Carboniferous Periods.

p. 247. W. E. Logan on the occurrence of a track and foot prints of an animal in the Potsdam sandstone of Lower Canada.

p. 361. On the Houghite of Prof. Shepard. By S. W. Johnson.

p. 395. Dr. Hough. New Localities of Minerals in St. Lawrence and Lewis counties, N. Y.

American Association for the Advancement of Science. (Fourth Meeting.)

Page 311. On Dysyntritite from St. Lawrence county, N. Y. By Prof. Shepard.

Page 314. On Houghite, from Oxbow and Rossie. By Professor Shepard.

Page 383. Analysis of Phlogopite Micas, from St. Lawrence county, N. Y. By William J. Craw.

Proceedings of the Boston Society of Natural History.

Vol. 3, p. 379. Mr. Wells on the Phosphate of Lime, at Crown Point, N. Y.

MINERALOGY.

Silliman's Journal. New Series.

Vol. 13, p. 117. Lievrite, found in Monroe, Orange county, N. Y., at the O'Neil Iron Mine.

Vol. 13, p. 264. Carbonate of Strontian, found in the rocks of the Clinton group in Oneida county, N. Y. By Prof. O. Root.

Vol. 13, p. 370. On Octahedral Olbigist Iron. By T. S. Hunt.

Vol. 13, p. 392. Two new Minerals from Monroe, Orange county. By Charles Upham Shepard, M. D. *Dimagnetite* and *Jenkinsite.*

Vol. 13, p. 416. Allanite, from West Point. By Dr. C. Bergemann, from Poggendorff's Annalen, and communicated to Silliman's Journal by W. G. Lettsom.

BOTANY.

Silliman's Journal. New Series.

Vol. 13, p. 397. Notice of some large trees in Western New-York. By S. B. Buckley.

[The subject of the present division of this report, has been taken up in the Appendix of Silliman's Journal, vol. 13, May 1852, under the title of "*American Zoological, Botanical and Geological Bibliography for the year* 1851. Prepared at the request of Professor Spencer F. Baird, Assistant Secretary Smithsonian Institution. By Charles Girard." As this will necessarily be more extensive and complete, and be regularly continued, this article will hereafter be discontinued from this report. We have however inserted the notices collected to May 1, 1852.]

(F.)

Description of the means employed to remove the Rocks at Hurlgate, by Submarine Engineering. By E. Meriam, (accompanying a specimen of the Rock presented to the State Cabinet.)

New-York, January 7th, 1852.

Dr. T. R. Beck,
Sec. of the Board of Regents of the
University of the State of New-York:

Dear Sir—In the month of October, 1849, M. Maillefert, a French Engineer, came to the City of New-York from Nassau, New Providence, for the express purpose of making proposals to remove the rocks from the channel of Hurl Gate by a new mode of Submarine Engineering. He proposed to break and scatter the rocks by exploding powder on the surfaces under water using the water as a fulcrum and igniting the charge by means of a galvanic battery.

His proposition was communicated to Congress and the Committee on Commerce of the House of Representatives recommended an appropriation of thirty thousand dollars for this object and the amount was included in the appropriations of the River and Harbor Bill, which passed the House but was lost in the Senate at the close of the session for want of time to act upon it.

An application was subsequently made to the Legislature of this State for an appropriation to cover the expenses of removing three of the most dangerous rocks from this great thoroughfare, but the application was unsuccessful.

In the summer of 1851 proceedings were commenced for raising the required amount by subscriptions to a loan to be repaid by the Government of the U. S. when Congress shall have made a special appropriation therefor.

The raising money by subscriptions to a loan has thus far been successful, and M. Maillefert has thus been afforded the opportunity of demonstrating the value of his discovery.

In the month of August last he commenced operations in the channel of Hurl Gate for breaking down and scattering Pot Rock. This rock was one of the most formidable obstructions in that great thoroughfare, which for two centuries had been a terror to navigators, and for near a century has been a reproach to the country, for the reason that no measures were taken to remove it.

At the depth of twenty-four feet below mean low water its length was two hundred and twenty-five feet, and width sixty feet. It had a depth of water on one side of sixty-two feet, and on the other of sixty feet. Its height was fifty-two feet—its apex reaching to within eight feet of the surface of the water. Its position was about midway in the channel where the current was very rapid, and a large and dangerous whirlpool was formed by it.

On the 20th of August two charges of 78 lbs. each were fired on this rock, which destroyed four feet in length of its top, and when twelve charges had been fired the whirlpool disappeared.

From the 20th of August to the 7th of November one hundred and forty-three submarine charges were fired upon Pot Rock. Twenty-seven of these were of 78 lbs. each, the residue of one hundred and twenty-five pounds each. The aggregate weight of the one hundred and forty-three charges was sixteen thousand six hundred and six pounds.

On the 7th of November, Lt. W. A. Bartlett, U. S. N. and Asst. in the Coast Survey, who had been detailed by Professor A. D. Bache, Supt. of the U. S. Coast Survey, to make surveys in Hurl Gate, made a survey of Pot Rock. The following communication from him states the result of his examination:

"HELL GATE, 3½ P. M., *Friday*, *Nov.* 7*th*, 1851.

"Mr. Meriam: Dear Sir—I have made a very complete examination of Pot Rock at low tide to day. I have to say now in anticipation of the plotted sheet that there is not less than eighteen and a quarter feet of water on any part of Pot Rock at low tide to-day. As soon as possible I will give you the plans of reference to mean low water.

"Yours truly,
W. A. BARTLETT,
U. S. N. and Assistant in the Coast Survey."

From the 7th of November to the 12th of December, ninety-one charges of one hundred and twenty-five pounds each, were fired upon Pot Rock. The aggregate weight of these ninety-one charges is eleven thousand three hundred and seventy-five pounds.

The number of charges fired from August 20th to Dec. 12th, is two hundred and thirty-four, and the aggregate weight of powder in the 234 charges is twenty-seven thousand nine hundred and eighty-one pounds.

The present surface of Pot Rock is very large, being equal to that of four full sized building lots, twenty-five feet by one hundred.

When M. Maillefert commenced operations on Pot Rock, he could only fire at high tide and during slack water. No charge could be fired on the rock while the tide was running. The tide turned very quick on the rock, the longest period for working being less than sixteen minutes, during which only two charges could be fired. In the early part of November he had broken down so much of the rock as to change the current to such an extent that he was enabled on the 20th of that month to fire thirteen charges in one day, at both high *and low* water, using sixteen hundred and twenty-five pounds of powder, or sixty-five kegs in a single days work.

When operations were commenced in August, there was but fourteen feet of water on the rock at high tide, now there is more than *twenty-five* feet. The greater the depth of water on the rock, the more effective is the force of the explosions.

One of Francis' Metallic Life-Boats was placed over a charge during the explosion, and received no injury. It was sometimes the case that vessels passing through the Gate, came close along side of Pot Rock at the time of the explosion of a charge, but in no case did any vessel receive injury from the force of the explosion.

Mons. Maillefert placed his boat containing the battery within sixty feet of the rock, when he fired the charge.

This enterprise presented two very important considerations. The *first* was the removal of the dangerous rocks from this great thoroughfare—the *second*, to afford M. Maillefert the opportunity of demonstrating conclusively the effect of his new system of blasting rocks under water without drilling, by using the water as a fulcrum. The result has been most satisfactory, and commerce, as well as science, will reap great and lasting benefits from the discovery, and men of science will be admonished to regard facts as far safer than theory to build upon.

I have forwarded to you, by Mr. D. K. Seaman, a large piece of gneiss, taken from Pot Rock, twenty-five feet below the surface, at high water. This fragment was broken from the body of the rock by means of the explosion of a charge fired upon it twenty-five feet below the surface. It may therefore be viewed as not only a rare, but a valuable specimen for the Geological Cabinet of the State of New-York.

Other rocks in the channel of Hurl Gate have been operated upon by M. Maillefert. A rock known as "Bald Headed Billy," has been entirely removed. This rock brought up a good many vessels. It was removed at an expense of five hundred dollars. Two rocks that lay near Pot Cove, opposite Mr. Edwin Hoit's mansion, have been entirely destroyed by eight submarine charges of one hundred and twenty-five pounds each.

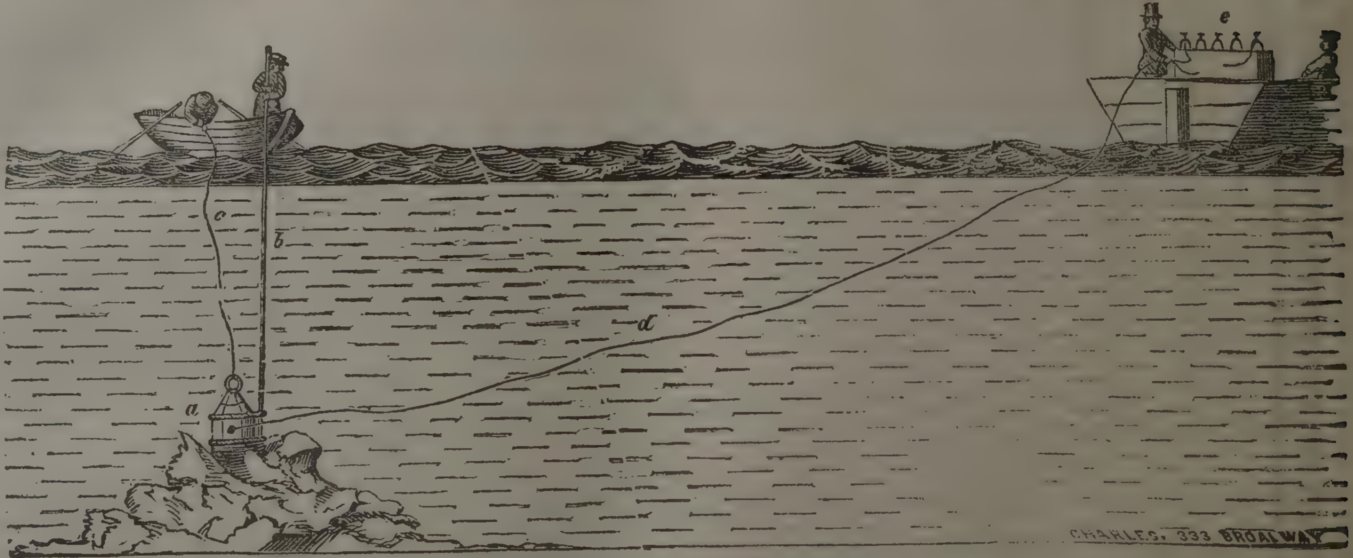
Eleven charges have been fired upon "Frying Pan," and seven upon "Ways Reef." Four charges have been fired upon "Diamond Reef," in the Harbor of New-York. The weather is now too cold for submarine operations, and but little more can be done on the rock until the spring, but what has already been accomplished with an outlay of less than eight thousand dollars, is worth hundreds of thousands of dollars to the country and to the world.

Annexed is an illustration showing M. Maillefert's plan of blasting rocks under water.

Yours very respectfully,

E. MERIAM.

AN ILLUSTRATION SHOWING M. MAILLEFERT'S PLAN OF BLASTING ROCKS UNDER WATER.



a. Canister containing gunpowder, strongly lashed.
b. Iron rod serving to guide the charge on the rock, by means of rings fixed on the canister.
c. Rope to lower down the charge.
d. Wire, or conductor, serving to ignite the charge.
e. Powerful galvanic battery, to fire the charge.

(G.)

Materials belonging to the State, which have been used in publishing the Natural History, and the Annual Reports of the Regents of the University, received into the Geological Rooms, since the twelfth day of February, 1851.

The wood cuts used in the Reports of the Regents of the University for the years 1849 and 1850, illustrating the articles furnished to the Indian collection in the State Cabinet by Lewis H. Morgan, Esq.

Two wood cuts of Parhelia, observed by Dr. Hough and figured in the Annual Report of the Regents for the year 1850.

Twenty-one original colored drawings, from articles of Indian manufacture in the Indian collection in the State Cabinet of Natural History, and from which the wood cuts were made to illustrate Mr. Morgan's Report on the articles furnished by him to the collection.

Five original drawings of ancient remains of art, from which the Lithographs accompanying Doct. Hough's paper on Indian Antiquities were taken.

Materials belonging to the State, which are intended to be used in completing the publication of the Natural History, received into the Geological Rooms since the twelfth day of February, 1851.

DEPARTMENT OF PALÆONTOLOGY.

Received, July 24th, 1851, of John E. Gavit, three thousand impressions, each, from plates 21, 24, 32, 33, 41, 49, 50 and 51 (eight plates) for the second volume of the Palæontology.

Received, October 1, 1851, of Richard H. Pease, steel plates, Nos. 34, 34^{a}, 35, 35, 36, 36^{a}, 74, for the second volume of the Palæontology; also, three thousand printed impressions each of plates Nos. 20, 34, 34^{a}, 35, 35, 36, 36^{a}, 37^{a}, 40^{f}, 59 66, 74, 78 for the second volume of the Palæontology.

Received, November 25, 1851, of Richard H. Pease, steel plates Nos. 38, 65, 67, 40^d; also, three thousand printed impressions of each plate.

Received, December 13, 1851, of Richard H. Pease, eight steel engravings of fossils for volume two of the Palæontology. The plates are not numbered.

DEPARTMENT OF AGRICULTURE.

INSECTS.

Received of Richard H. Pease, the following steel plates of insects, viz: Nos. 6, 7, 8, 9, 10 and 11; also, three thousand printed impressions of each plate.

Received, May 22, 1851, of Richard H. Pease, the following steel plates of insects, viz: Nos. 12, 13, 14, 15, 16 and 17; also, three thousand printed impressions of each plate.

Received, October 1, 1851, of Richard H. Pease, three thousand printed impressions of plate A. of insects; also, steel plates of insects, Nos. 18, 19, 20 and 21.

Received, December 26, 1851, of Richard H. Pease, three thousand printed impressions each of plates, Nos. 22, 23, B, C, of insects; also, the steel plates B, C, of insects.

FRUITS.

Received October 1, 1851, of Richard H. Pease, three thousand printed impressions each, of the following plates of Fruits. (Colored,) viz: Nos. 24, 25, 27, 28, 29, 32, 45, 46, 53, 56, 57, 70, 73, 69, 5^a and 72.

Received December 1, 1851, of Richard H. Pease, Steel Plate 76, (Currants.)

Received December 26, 1851, of Richard H. Pease, three thousand printed impressions each, of the following Plates of Fruits, (Colored,) viz: Nos. 5, 6, 9^d, 9^d, 11^d, 12^d, 13^d, 14^d, 26, 37, 44, 47, 48, 49, 50, 51, 52, 54, 55, 58, 63, 74, 80, 81. Also Plate 44 of Fruits.

APPENDIX.

REPORT

ON THE

FABRICS, INVENTIONS, IMPLEMENTS AND UTENSILS

OF THE

IROQUOIS,

MADE TO THE REGENTS OF THE UNIVERSITY, JAN. 22, 1851,

By LEWIS H. MORGAN.

ILLUSTRATIVE OF THE COLLECTION ANNEXED

TO THE

State Cabinet of Natural History,

With Illustrations

By Richard H. Pease, Albany.

ORDERED TO BE PRINTED, BY THE ASSEMBLY, 1852.

REPORT.

The Regents of the University having renewed their appropriation for the further enlargement of the Indian collection, and again committed its expenditure to the undersigned, he asks leave to submit the following

REPORT:

It is an easy matter to bring together the fabrics and inventions of the modern Iroquois in sufficient completeness to illustrate the present condition of Indian society within the limits of the State. Their range and diversity are neither so wide, or so complicated, as to preclude the possibility of a minute exhibition of the articles, of every name, which are either of original or secondary manufacture. If the effort for their collection is continued for a few successive years, it will not only result in exhausting the subject, so far as their present fabrics are concerned, but, acting backwards upon the past, it will draw forth many ancient inventions which are now held in the memory of the aged, or in the grasp of tradition.

When every thing which the Iroquois can furnish of their present manufacture, or recall through tradition from the past, is brought into one collection, it is but a commencement of the interesting work of gathering together whatever will illustrate the inventive intellect of the Indian family. In a general, but correct view of this subject, it is unnecessary to discriminate, except for classification, between the fabrics and inventions of the Iroquois, and those of the Indian family at large. They are united in one harmonious and connected system, sprang from a common mind, and all together are necessary to exhibit the artizan capacity and social condition of the Indian from the era of aboriginal occupation down to the present period, when Indian life, in some parts of the republic, is merged in comparative civilization.

While the attention of the Regents, and of the people of the State, is very naturally directed, in the first instance, to the fabrics of the Iroquois, a people with whom we stand in many interesting relations, it should not, and cannot properly be limited to them alone. A collection, worthy of the State, must necessarily take a wider range, and aim at a general and universal collection of the fabrics, inventions, implements and utensils of the whole Indian family: from the stone tomahawk of the Pequod, and the rude pottery of the Mobilian tribes, to the beautiful bark and moose hair basket-work of the Chippeway, and the delicate, bead-work embroidery of the modern Iroquois. A few years of well directed effort, with a small expenditure of money, would secure such a collection; one which would not only become as widely known as the Indian whose social history it proclaims, but would form an enduring monument to the enlightened munificence of the State.

By a reference to the schedule which accompanies this report, it will be perceived that the additions the present year are, at least, equal in variety and interest with those of the preceding. Some of them are of the same name and general character; but in such cases the article itself will be found to be either a more perfect specimen, different in some essential particular, or from some other locality. A minute description of each article will not be attempted. It will be proper, however, to introduce the most prominent among them with a brief explanation of their objects and uses. A portion of these articles were obtained of the Mohawks, Onondagas, Cayugas, Senecas and Tuscaroras, who, to the number of two thousand four hundred and fifty, now reside upon a large reserve secured to them by the British government, on Grand river, in the Niagara peninsula in Upper Canada. But the residue, and the chief portion, were obtained from the Senecas in the western part of the State. They number in all two hundred and twenty, and the articles themselves are of one hundred and fifteen distinct species.

Gä-sweh-tä Ote-ko-ă,[1] OR BELT OF WAMPUM.

No. 3. Plate 1, figure 1.

Ote-ko-ă, OR STRING OF WAMPUM.

No. 4. Plate 2, figure 2.

The use of Wampum reaches back to a remote period upon this continent. It was an original Indian notion which prevailed among the Iroquois as early, at least, as the formation of the League. The primitive wampum of the Iroquois consisted of strings of a small fresh water spiral shell, called in the Seneca dialect *Ote-ko-ă*, the name of which has been bestowed upon the modern wampum. When *Da-gä-no-we-dä*, the founder of the League, had perfected its organic provisions, he produced several strings of this ancient wampum of his own arranging, and taught them its use in recording the provisions of the compact by which the several nations were united into one people. At a subsequent day the wampum in present use was introduced among them by the Dutch, who in the manufactured shell bead offered an acceptable substitute for the less convenient one of the spiral shell. These beads, as shown in the plate, are purple and white, about a quarter of an inch in length, an eighth in diameter, and perforated lengthwise so as to be strung on sinew or bark thread. The white bead was manufactured from the great conch sea shell, and the purple from the muscle shell. They are woven into belts, or used in strings simply, in both of which conditions they are employed to record treaty stipulations, to convey messages, and to subserve many religious and social purposes. The word *wampum* is not of Iroquois origin. Baylie, in his History of New Plymouth, informs us that it was first known in New-England as *Wampumpeag*, from which its Algonquin derivation is to be inferred; and Hutchinson says that the art of making it was obtained from the Dutch about the year 1627.

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[1] NOTE.—The reader should note the characters by which the different sounds of the vowel *a*, the letter upon which the greatest variations are made, is indicated:—ä is sounded as in arm; ă as in at; a as in ale. All of the Indian words used are in the Seneca dialect of the Iroquois language.

In making a belt no particular pattern was followed: sometimes they are of the width of three fingers and three feet long, in other instances as wide as the hand, and over three feet in length; sometimes they are all of one color, in others variegated, and in still others woven with the figures of men to symbolize, by their attitudes, the objects or events they were designed to commemorate. The most common width was three fingers, or the width of seven beads, the length ranging from two to six feet. In belt making, which is a simple process, eight strands or cords of bark thread are first twisted, from filaments of slippery elm, of the requisite length and size; after which they are passed through a strip of deer skin to separate them at equal distances from each other in parallel lines. A piece of splint is then sprung in the form of a bow, to which each end of the several strings is secured, and by which all of them are held in tension, like warp threads in a weaving machine. Seven beads, these making the intended width of the belt, are then run upon a thread by means of a needle, and are passed under the cords at right angles, so as to bring one bead lengthwise between each cord, and the one next in position. The thread is then passed back again along the upper side of the cords and again through each of the beads; so that each bead is held firmly in its place by means of two threads, one passing under and one above the cords. This process is continued until the belt reaches its intended length, when the ends of the cords are tied, the end of the belt covered, and afterwards trimmed with ribbons. In ancient times both the cords and the thread were of sinew.

The belt possesses an additional interest from the fact, that the beads of which it is composed, formerly belonged to the celebrated Mohawk Chief, Joseph Brant *Tä-yen-dä-ná-ga.* They were purchased, by the writer, of his youngest daughter Catharine in October last, at the reservation on Grand river in Upper Canada before referred to; and were afterwards taken to Tonawanda in this State and made into the present belt. In this form it will be most convenient to preserve them as a relic of the distinguished war captain of the Mohawks.

Wampum was also put up in strings, from two to three and sometimes four feet in length, several of which were joined together into one. The string represented in the plate was obtained of an Onondaga on Grand river.

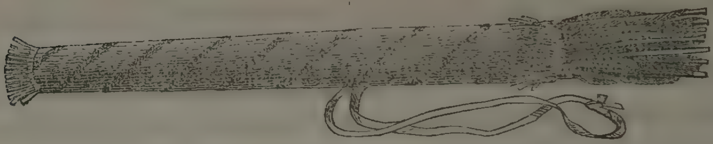
Both in strings and belts, wampum was put to a great variety of uses. Its office was to record treaties, and preserve such transactions as were worthy of particular remembrance. Whatever was to be entrusted to its keeping was " talked into" the belt or string which ever afterwards could tell, by means of an interpreter, the exact transaction of which it was made at the time the sole evidence. Operating upon the principle of association, the belt or string gave fidelity to the memory. As the laws and usages of the League were entrusted to the guardianship of such belts and strings, one of the Onondaga sachems, *Ho-no-we-nă-to*, was made hereditary keeper of the Wampum, and he, and his successors, were required to be versed in its interpretation. These belts and strings were the only visible records of the Iroquois, and were of no use except by the aid of those special personages who could draw forth the secret records locked up in their remembrance.

White wampum was the Iroquois emblem of purity and of faith, It was hung around the neck of the White Dog before it was burned; it was used before the periodical religious festivals for the confession of sins, no confession being regarded as sincere unless recorded with white wampum; further than this, it was the customary offering in condonation of murder, although the purple was sometimes employed. Six strings was the value of a life, or the quantity sent in condonation, for the wampum was rather sent as the evidence of a regretful confession of the crime, with a petition for forgiveness, than as the actual price of blood.

Wampum has frequently been called the money of the Indian; but there is no sufficient reason for supposing that they ever made it an exclusive currency, or a currency in any sense, more than silver or other ornaments. All personal ornaments, and most other articles of personal property passed from hand to hand at a fixed value; but they appear to have had no common standard of value until they found it in our currency. If wampum had been their currency it would have had a settled value to which all other articles would have been referred. There is no doubt that it came nearer to a currency than any other species of property among them, because its uses were so general, and its transit from hand to hand so easy, that every one could be said to need it. The ancient value of wampum was half a cent per bead, according to the statement of Catharine, the daughter of Brant. It is now very scarce and difficult to procure, as the manufacture of it ceased many years ago, and the quantity has been gradually diminishing with the lapse of time. It bids fair to rise again to its primitive value, at the period when it was exchanged for furs.

Gä-däs-hă OR SHEAF.

No. 1.

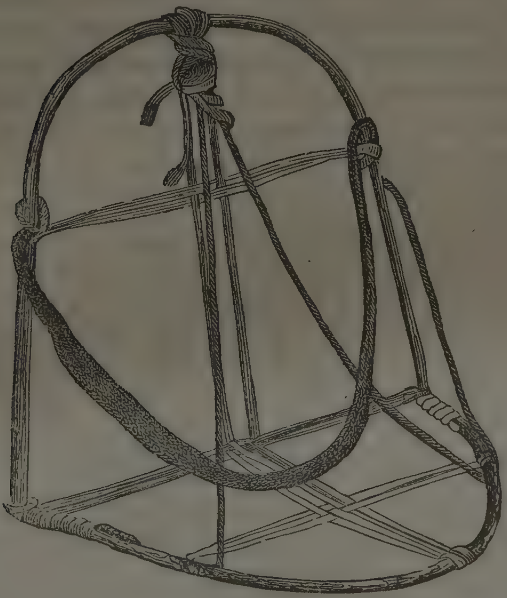


2 feet.

The sheaf is an Indian invention of great antiquity, and universal among Indian races. It was sometimes made of the skin of a small animal, like the wolf, which was taken off entire, dressed with the hair on, and hung upon the back, the arrows being placed within it. But the choicer articles were made of dressed unhaired deer skin, and embroidered with porcupine quills as represented in the figure. It was made of two strips of deer skin about two feet in length and of unequal width ; one of these was narrow for the back side ; the other about three times its width so as to make a convex front, thus forming a species of sac in which the arrows were deposited. The ordinary sheaf, as used by the Iroquois in ancient times, would hold from fifteen to twenty-five arrows ; but those used by the western Indians were generally large enough for forty or fifty. It was worn on the back inclining from the left shoulder down towards the belt on the right side of the body, crossing the back diagonally. There are deer string fastenings at each end, the lower ones being attached to the waist belt, and the upper ones passing around the neck and under the left arm. To draw forth an arrow and place it in the bow, it was necessary to raise the right hand to the left shoulder when it came at once in contact with the feathered end, which projected from the sheaf; so that it was but the work of a second to set an arrow in its place. Originally the Indian bow was about three feet in length, and the arrow two; and it is said to have been an easy matter for an Iroquois hunter, with a bow of this description, to send an arrow, pointed with flint or horn, entirely through a deer. But in later days, when this weapon came to be used merely for amusement, and the muscular strength acquired, by its use, had abated, the bow was lengthened to four feet and the arrow to three.

Gä-ne-ko-wä-ah, BURDEN FRAME, OR LITTER.

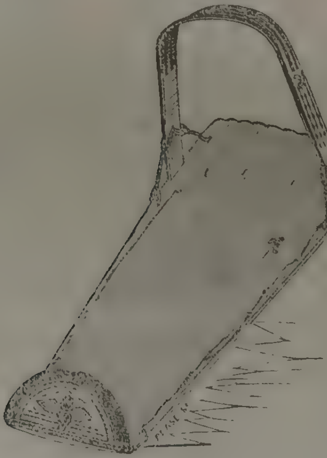
No. 113.



This is an ancient contrivance to assist in carrying burdens. Game, cooking utensils, wood, bark, in fact everything which could be transported by hand could be borne upon this frame. They were a necessary appendage to every house, to the traveller, and to the hunter. Sometimes they were elaborately carved and finished, but more frequently were of a plain piece of hickory, like the one represented in the figure, and made with the quickest dispatch. The frame consists of two bows of Hickory, brought together at right angles, and fastened to each other by means of an eye and head. The upright part of the frame is the same as the horizontal in all particulars, except its greater length. Strips from the inner rind of bass wood bark were then passed between the bows both length and crosswise, and fastened to the rim pieces. A burden strap was then attached to the frame at the point where the strip of bark passed across the upright bow from side to side; and from thence it passed diagonally across to the horizontal part of the frame, to the point where the lower strip of bark crossed that part of the frame. There were several feet of rope at each end, reserved to lash around whatever burden was placed upon the frame; but when the frame was empty, as it is shown above, these ropes were passed up to the top of the frame and there secured. After being loaded the frame was placed upon the back, and the burden strap passed over the head and placed across the chest. If the burden was very heavy it was customary to use two straps, one across the chest, and the other against the forehead. At the present day the burden frame is still in use.

Gă-ose-hă, OR BABY FRAME.

No. 19.



In the collection will be found two specimens, one of which was procured of a Tuscarora woman on Grand river, and the other of a Seneca at Tonawanda. This figure is introduced to show the frame divested of the belts and drapery by which, when in actual use, it is entirely concealed. It consists of but three principal pieces of wood, the bow, bottom board and foot board, upon the first and last of which the most labor was bestowed. They are always carved, and frequently inlaid with silver, or with wood of different colors and in various figures. The bow, which arches over, is held to the bottom board by means of a cross piece, passing under it, into which the ends of the bow are inserted. It is further secured in its perpendicular position by means of side pieces in which the bow is embedded. The foot board at the small end of the frame is also carved, and often inlaid, it being the only part of it which is exposed when the infant is lashed upon the frame. Deer strings are run along the outer edges of the bottom board under which the belts are passed from side to side passing over the body of the child. As a whole the Gă-ose-hă, with its embroidered belts, and other decorations, is one of the most conspicuous articles pertaining to their social life.

Gă-swă-hose-hă, or BABY FRAME BELT: }
Gă-nose-gă, or BABY FRAME BELT. }

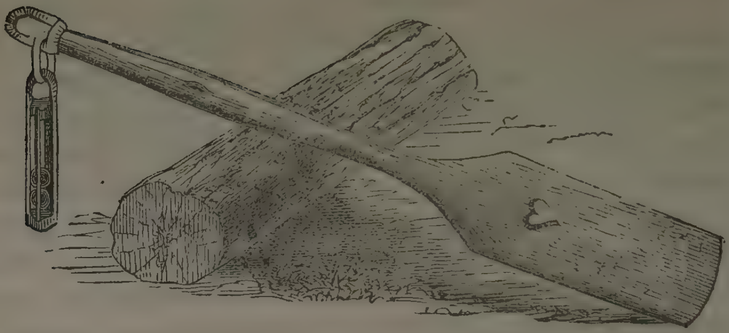
Plate 2.

Gă-nose-gă, or BABY FRAME BELT.

The covering of the frame consists of a spread to draw over the bow, and these belts. The largest belt (*Gä swä-hose-hă*, Fig. 1,) is of red broad cloth, beautifully embroidered with bead work. This is attached to the frame next to the bow, and passed over the frame from side to side, under the deer strings and above the child, finally bringing that part of it, which is most embroidered in the centre of the frame. In like manner the second belt, (*Gă-nose-gă*, Fig. 2,) which is made of broad cloth, is adjusted at the foot of the frame. Between the two the short belts (fig. 3,) is inserted. Over the bow is drawn the spread (*Yen-dus-ho-dä-quä*) usually of red merino, embroidered with beads, and often decorated with silver ornaments. Rattles were attached to the bow for the amusement of the child; but as its arms were confined beneath the belts, this gratification was only afforded when the frame was rocked by the Indian mother, or waved by the breeze while depending from the branch of a tree.

Gät-go-ne-as-heh, or HOMMONY BLADE.

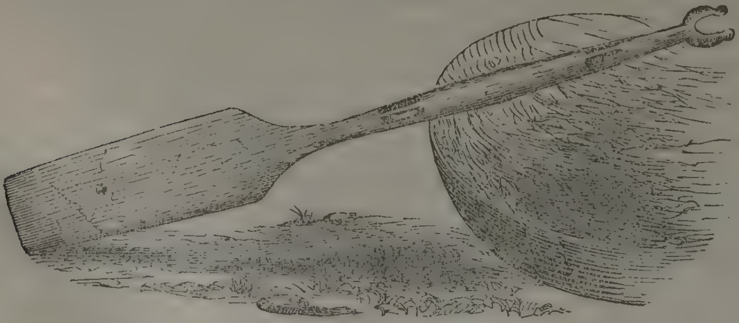
No. 36.



4 feet.

Many of the domestic utensils of the Iroquois were of wood. Figures of animals, of birds, and sometimes of reptiles were carved upon them in the most ingenious manner. The hommony blade or soup stick is one of this description; an article used in every Indian household for making hommony, succotash, or soup, and for many other purposes. It is usually from three to four feet in length, and made of hard maple, or other tough wood, in the general form of the one represented in the figure. This hommony blade is made out of one piece of wood, although the end piece is attached to the blade by a link. In the end piece are two wooden balls, also cut out of the solid wood within the frame in which they are confined. For a wooden utensil it is beautifully made.

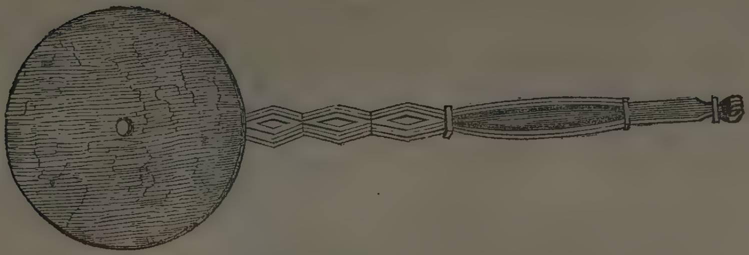
No. 36.



This specimen is made in a different fashion, although much the same as the former. In the handle are two balls cut out, like the above, of the solid wood within the frame in which they are seen, while the end of the utensil terminates in two human figures facing each other. Sometimes several links are cut out at the end of the handle, of which kind two specimens will be found in the collection. Those figured above are of Seneca manufacture.

Ya-ă-go-gen-tă-quă, or BREAD TURNER.

No. 38.

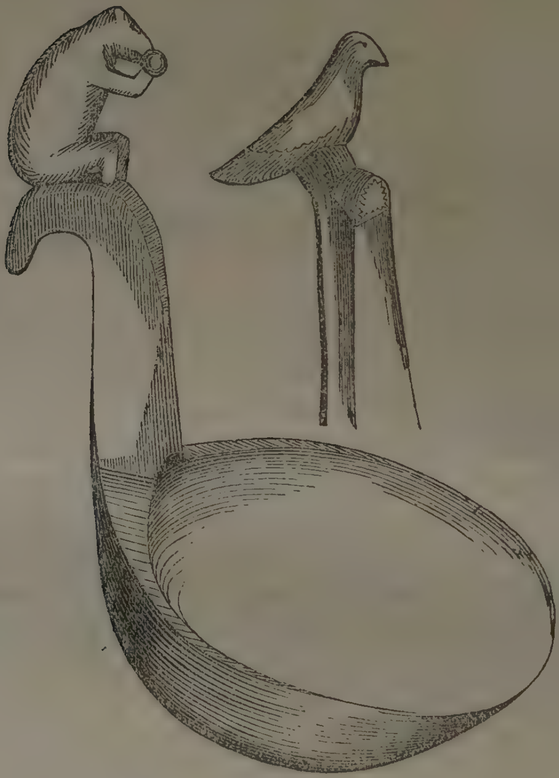


3½ feet.

The corn bread of the Indian is unleavened, and cooked by boiling in water. After hulling the corn and pounding it into flour, it is made into loaves about six inches in diameter and two in thickness. These loaves or cakes are then boiled until they are hard, which is the general mode of cooking; but they are sometimes baked. The bread turner is used, as its name indicates, to handle these loaves while under the process of cooking. The specimen given above was obtained from a Tuscarora woman on Grand river.

Ah-do-gwä-seh, or LADLE.

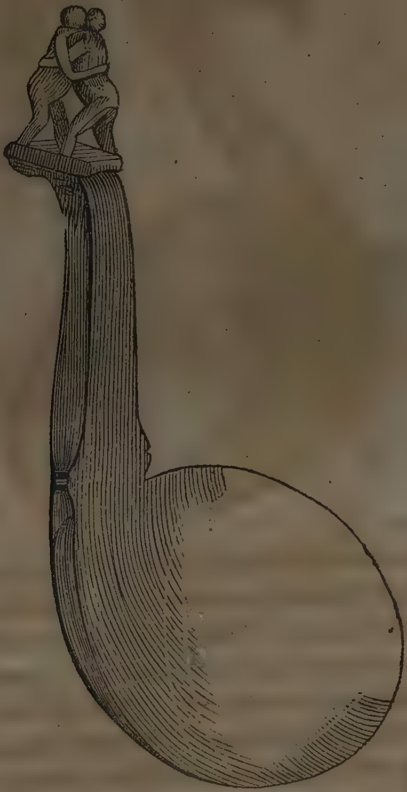
No. 40.



In ancient times the ladle not only answered as a substitute for the spoon among the Iroquois, but supplied the place of every other contrivance for taking food from the dish. They are made of hard wood, of different sizes and patterns, and very perfectly finished. The end of the handle is often surmounted with the figure of an animal or bird, so carved as to form a species of hook upon the back of the ladle with which to hang it upon the side of the dish. These figures were often carved with surpassing skill, the proportions, and attitude of the animal being accurately preserved and studied. Of the two figured above, the one surmounted with a squirrel was made at Tonawanda by a Seneca; and the other, with a hawk, upon Grand river, by a Cayuga. They are both finished specimens of the Indian ladle.

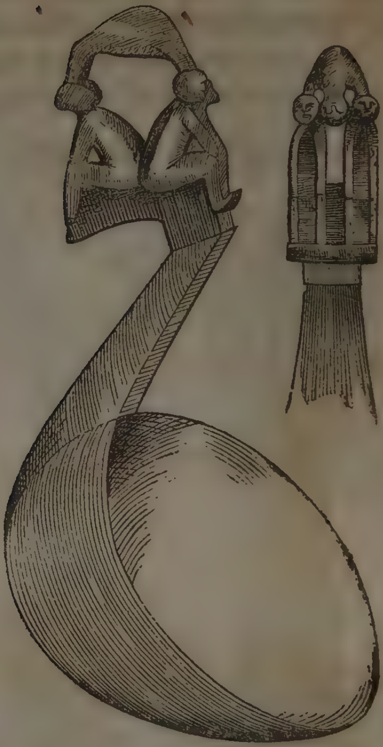
LADLE, WITH WRESTLERS.

No. 39.



LADLE WITH SITTING FIGURES.

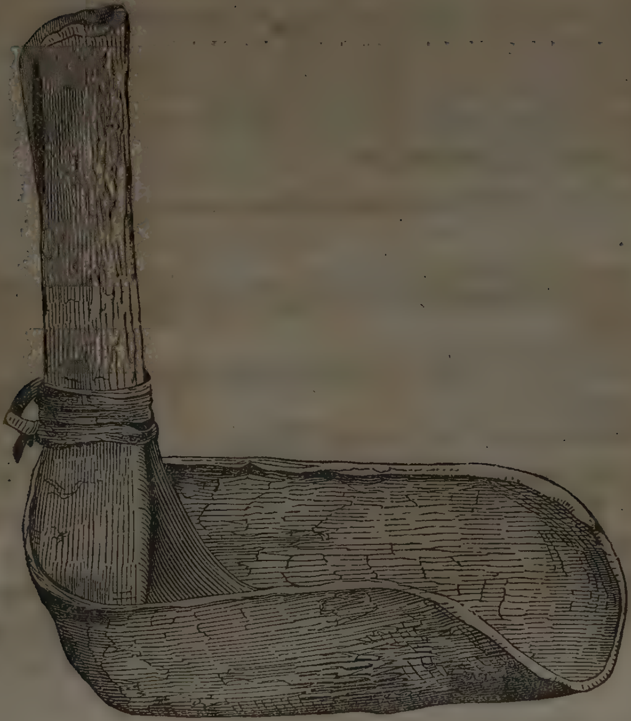
No. 41.



In other instances the human form was introduced in various attitudes. The figure of the wrestlers is quite spirited, and a good specimen of wood carving. Upon the others it will be seen there are five figures; four of them in a stooping posture, and the fifth bending over backwards, with his hands and feet each upon the head of one of the sitting figures. Other specimens are surmounted with a turtle, or a swan, or a wolf, at the fancy of the maker. These ladles are found in large numbers in every Indian family, at least one for every member of the household, in which to the present day they are the substitute for the spoon, and in most families, for the knife and fork. In minuteness, delicacy, and beauty of carving the ladle surpasses all the other wooden utensils of the Iroquois. In the collection will be found four specimens carved with human figures, seven with those of animals, and two plain; part of them were obtained among the Senecas, and the residue of the Iroquois in Canada.

BARK LADLE.

No. 42.



The original ladle was of bark and a very simple contrivance, as will appear from the above representation. It was made of red elm bark, and would hold but little more than the common spoon. In ancient times ladles of this description only were used; but they were laid aside when the possession of metalic implements enabled them to substitute the present one of wood. The ladle is, without doubt, an original Indian utensil, and in all probability the origin of the common wooden ladle still in general use among our own people.

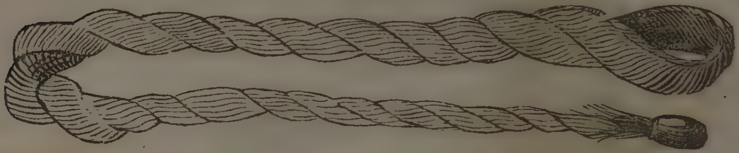
O-sä, or BASSWOOD BARK.

No. 88.

In the former report the subject of rope making from filaments of bark was adverted to, but not particularly explained. As fabrics of bark occupy a conspicuous place in their domestic economy, as well as form an interesting department of Indian manufacture, some further notice of the art will be made. The Iroquois used but two kinds of bark, the slippery elm and the basswood, the former for thread, twine, and burden straps; and the latter, which is a coarser bark, for ropes and heavy belts. At the proper season the inner rind of the bark was peeled off in narrow strips six or eight feet in length and tied up in bunches, as represented in the figure above, this being the first stage in the process of manufacture.

O-sä̆, OR SKEIN OF BASSWOOD FILAMENTS.

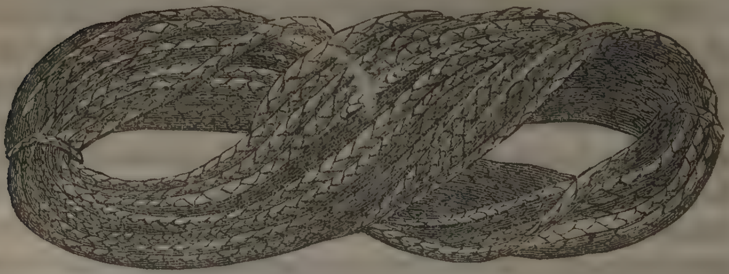
No. 87.



Before it would run off into filaments or small threads, it was boiled in ashes and water, washed thoroughly, and dried in the sun. It could then be separated into natural threads or filaments of any size, which, unless too fine, would run the length of the strips of bark. It was then put up in skeins, as shown in the figure, ready for use.

Gä-a-sken-dä, OR BARK ROPE.

No. 81.

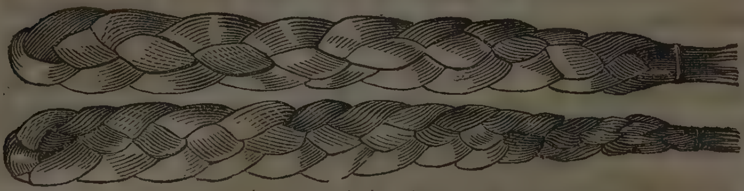


Basswood filaments were usually run off coarse, and, in that condition, braided into ropes, as represented above. Three strands only were used, and in the process of braiding, which was done by hand, these strands were not twisted, as their strength would not thereby be increased. A specimen of this bark rope fifty feet in length is furnished, and two others about thirty feet each. In some instances burden straps of a coarser kind were made of basswood, which was braided into an open work belt, with interstices between the strands. Upon the burden frame mentioned above is a strap of this description.

The inner rind of the slippery elm bark is peeled off, in the first instance, in narrow strips about four feet in length, and tied up in bundles. It is sometimes preserved for months in this form before it is made into threads. After being boiled in ashes and water, and washed and dried in the same manner as basswood bark, it is run off into filaments, which can be made as fine as small thread, if desired.

Ose-gă, OF SKEIN OF SLIPPERY ELM FILAMENTS.

No. 83.



These threads are then tied up in skeins, as represented above, and laid aside for use. For burden straps of the best quality, this thread alone is used, it being stronger, more pliable, and of a finer texture than the basswood. The skeins themselves have a reddish tinge usually, but the first quality has a grayish color. They are sometimes dyed black or some fancy color, to give variety to the belts into which they are woven. A specimen of the gray and of the colored bark thread is also furnished.

In the manufacture of the several species of burden strap, more skill, ingenuity and patient industry are exhibited, perhaps, than in any other single article fabricated by the Iroquois. The strap consists of a belt in the centre about two feet in length by two and a half inches in width, with ropes at each end about seven feet each; thus making its entire length from fifteen to twenty feet. It is used attached to the litter or burden frame, to the baby frame, and to the basket, when these burdens are to be borne on the back; in which cases the belt is passed around the forehead. Fifteen or twenty small cords are first made, about three feet in length, by twisting the filaments of bark by hand. These cords, which make the warp, or substance of the belt, are then placed parallel with each other, and side by side; after which finer threads of the same material, usually colored, are prepared for the filling, to be passed across the cords over and under each alternately from side to side and back again. The fine thread, or filling, is twisted in the first instance, and also again as it is braided or woven in with the warp while being passed across from side to side. As the work is all done by hand, it is a slow and laborious process, but the specimen will show how successfully it is accomplished. After the filling has thus been braided in with the warp, each of the main cords, although covered on both sides, literally wound with the finer threads in crossing and returning, is still distinctly visible, giving to the belt the appearance of being ribbed. The whole process is exactly the same as the modern process of weaving, the main difference consisting in this, that in the latter the warp and filling are nearly equal in the size of the threads, while in the Indian art the warp is several times larger than the filling.

Towards the ends the belt is narrowed gradually by joining two of the cords in one, until its width is diminished about one-third. The cords are then lengthened out by adding new filaments, and braided into an open-work band or bark rope about an inch wide, and flat; the band consisting of as many strands as there were cords at the end of the belt. The surface of these belts is generally smooth and even, and the belt itself so closely braided as to leave no interstices through which the eye could penetrate. When threads of different colors were used, the belt was variegated simply, or small figures were woven in it for ornament.

Another species of burden strap, of more expeditious manufacture, was made by placing the warp cords side by side, and stitching them through and through with bark thread, in which case the cords themselves were made larger than in the ordinary burden strap. For stitching, a hickory or bone needle, without an eye, was used in ancient times. As the cords consisted of two strong threads twisted into one, the stitching thread was passed through each cord, between its two parts, from one side to the other and back again. Ropes were then attached to the ends of the belt and the work was completed.

O-ä-ta-ose-kä, OR MOOSE HAIR BURDEN STRAP, }
Gus-hä-ah, OR DEER HAIR do }

No. 74 Plate 3.

Near the rump of the Moose (*Yen-dä-ne*,) and near the neck between the shoulders, there are small tufts of white hair, about four inches in length, each yielding a small handful. These hairs were carefully preserved, dyed red, blue and yellow, and used in the manufacture of the finest varieties of burden straps. Similar tufts of hair, but inferior in quality, are found upon the Elk, (*Jo-ră-dä*,) and in the tail of the deer (*Na-o-geh.*) The Moose hair burden strap is made in all respects as above described, except that the thread, which serves as the filling, is wound with this hair upon one side of the belt, in such a way, as either to cover the whole face of the belt, or to sprinkle it through with small figures at the pleasure of the maker. The one represented in the plate (fig. 1.) is a very perfect and beautiful piece of work, nearly the whole upper surface of the belt being covered with Moose hair, white, yellow, red and blue, which is woven into the belt in a regular figure. It was made by an Onondaga woman on Grand river in Upper Canada, where it was purchased in October last. Although it has been used many years, and the colors have lost some portion of their original brilliancy, it is yet wholly unimpaired, and a remarkable specimen of finger weaving, as well as of artizan skill. It is not only woven compactly, but with such evenness of thread as to present a smooth surface and uniform texture. It is difficult to believe, upon an examination of the under side of the belt, that it is manufactured with bark threads; and perhaps still more incredible, that in the mechanism of this belt, can be found the primary elements of the art of weaving.

In figure 2 of the plate is a representation of a burden strap in which deer's hair is used. It is made in the same general fashion as the preceding, and is the work of a Seneca woman at Tonawanda.

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1. Among the Chippeways a great variety of fancy work in the nature of baskets, &c., is made of birch bark, upon which various figures are worked with moose hair of the kind above described.

Da-gä-yä-sont, or SILVER CROSS.

No. 6. Plate 4.

The passion of the Iroquois for silver ornaments in ancient times was very extravagant; and down to the present day it has suffered but little abatement. This inclination was seized upon by the trader, who purchased the richest furs with articles of this description of small comparative value. Among the number is found the silver cross, which doubtless owed its introduction among them, in the first instance, to the pious ministrations of the Jesuits; but at the present day it is regarded merely as a personal ornament, and is without significance to them as a religious emblem. When worn they were attached to a necklace, or perhaps fastened to the hat, or hung upon the hair. The one figured in the plate is of unusual dimensions, the longest part being about ten inches, and the transverse about six, and made of solid silver. It was purchased of a Cayuga on Grand river. They are frequently found with two transverse pieces of silver, as shown in the two small crosses, figures 2 and 3. Sometimes they are engraved with figures of animals or birds, as a swan. The name "Montreal" is stamped upon two out of the three other crosses in the collection, thus indicating the place of manufacture.

An-ne-as-gă, or SILVER BROACH.

No. 9. Plate 6.

Ah-was-hă, or EAR RING.

No. 15. Plate 5.

Au-ne-ä-hus-hā, or FINGER RING.

No. 14. Plate 5.

Broaches of silver are worn by every female. They are of all sizes and patterns, from six inches in diameter, and worth as many dollars, to half an inch and worth a half dime; answering upon the female dress the double purpose of ornament and use. At a fixed value they pass from hand to hand, thus forming a species of currency among them. Every Indian female, however humble, has some silver broaches, while occasionally those can be found who count them by hundreds. The larger ones are usually worn upon the *Ah-de-a-dä-we-sä*, or over dress, in front, as a button or pin, the largest being placed at the bottom. Sometimes the smaller ones are strung together and worn as a hat band, or as a necklace.

Finger and ear rings of the same material, specimens of which may be seen in the plate, were also very common. The most of these silver ornaments in later years have been made by Indian silversmiths, one of whom may be found in nearly every Indian village. They are either made of brass, of silver, or from silver coins pounded out, and then cut into patterns with metalic instruments. The ear rings figured in the plate were made out of bar silver, by an Onondaga silversmith on Grand river, under the direction of the writer.

Ont-wis-tä-ne-un-dä-qua, OF SILVER BEADS.

No. 17. Plate 6.

The long silver beads, represented in the plate, were very common in former times, but are now rarely to be met with. They are simply tubes of silver, varying from one to two inches in length, and strung upon deer string, with round silver beads between them part of the way from the lower end of the string. In this string there are seven strands, all of which are banded together by the deer strings which issue from the small ends of the several strings; but at the larger ends, they are disunited. It was purchased of the wife of a distinguished Cayuga sachem, John Jacobs, (*Jote-ho-weh-ko*) on Grand river. Beads of this description are worn around the neck, or in the hair, or perhaps as a hat band, to which use they were devoted at the time of their purchase. They bear evidence of long usage.

O-wìs-tä-no-o, OF ROUND SILVER BEADS.

No 18. Plate 7. Fig. 2.

Gă-te-as-hă, OF GLASS BEADS.

No. 47. Plate 7. Fig. 1.

The round silver beads figured in the plate, which were obtained of a Seneca female at Tonawanda, were evidently made in imitation of the old fashioned gold beads, as there is a close resemblance in size and workmanship. At an early day these beads were in great favor with the Indian female, but now they are seldom to be met with. Every fifth bead upon the string is of an opaque blue glass, introduced for contrast.

The common glass beads (fig. 1) have always been and still continue to be in high favor. From the period of their discovery to the present time, glass trinkets of this description have continued to dazzle the eye of the Indian maiden, and to be seized upon with the greatest avidity. The brilliancy of their colors, the neatness of their finish, and their conspicuous appearance as personal ornaments, have ever given to necklaces of this description a peculiar charm; a charm sufficiently potent to draw forth the richest furs from the depths of the wilderness, to be freely exchanged, although a thousand fold more valuable, for these glittering baubles. The specimen figured in the plate was procured of a Mohawk girl in Canada.

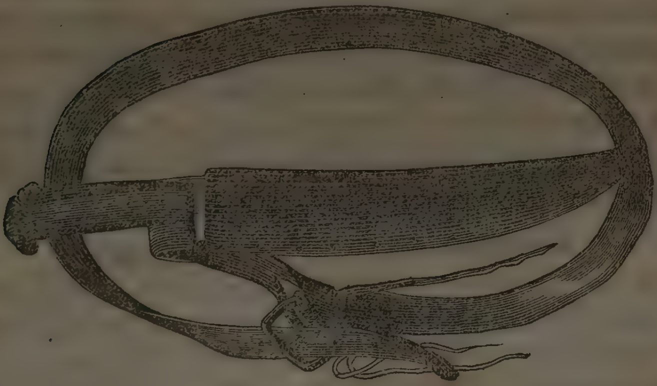
Gä-te-äs-hă Gä-a-o-tä-ges, or GRASS SHOULDER ORNAMENT.

No. 78. Plate 8.

This article of dress is in the nature of a necklace. It is made of a fragrant marsh grass called by the Senecas Gä-a-ó-tä-ges, which is first braided into small three strand cords, after which several of them are united in one chain. At intervals of three or four inches small discs, made of the same material, but sometimes covered upon the upper face with bead work, are attached, together with some other ornaments. On the specimen represented may be seen a small and delicately made basket of the size of a thimble, made of the same grass. This is more particularly a female ornament, although in ancient times it appears to have been worn by both sexes. The grass of which it is made constantly emits an agreeable odor, the fragrance of which made a species of substitute for artificial perfumery. It was obtained of an Oneida female on Grand river

Gä-gä-ne-as-heh, OR KNIFE AND BELT.

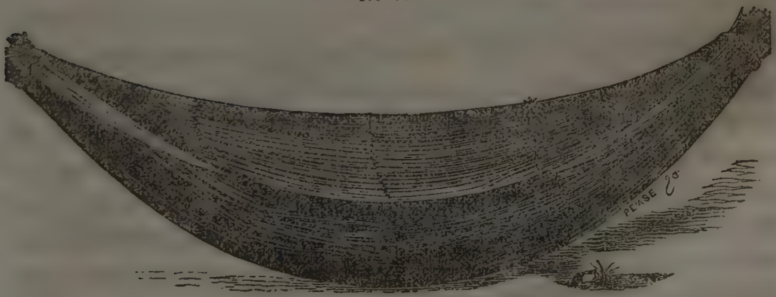
No. 54.



Among the Senecas in this State, and the Iroquois in Canada, the knife and belt are very frequently to be seen as a part of their daily apparel. To the leather belt a plain sheath is attached, in which the knife is worn, the handle appearing partly above it. Formerly the tomahawk was worn in the belt, and behind the back, from which circumstance doubtless originated the habit of wearing the knife in the same manner; for it is as frequently seen behind the back as upon the side. The blade, which is usually from six to ten inches in length, is that of a common knife; and it is used as a substitute for the pocket knife, as well as for a great variety of purposes. The one figured above was procured of a Seneca on Grand river.

Yun-des-ho-yon-dä-gwat-hä, OR POP CORN SEIVE.

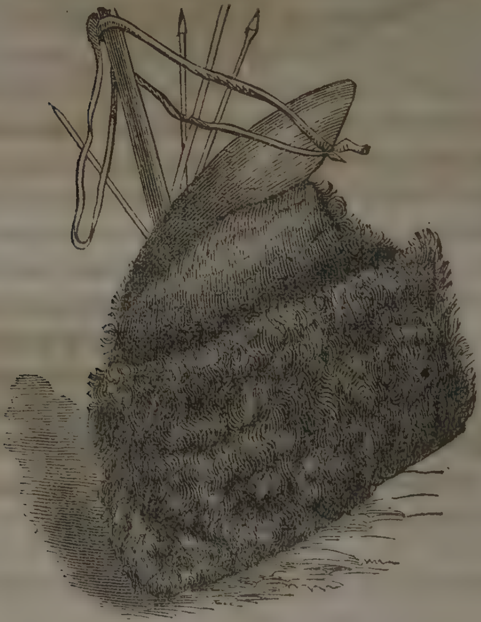
No. 98.



Corn was charred by roasting it before a long fire in the field while in its green state. Before reducing it to charred corn flour it was parched over in the ashes to reduce its weight still more by drying. The splint seive represented in the figure was used to sift out the fine ashes which might adhere to the kernel. After the corn was thus purified it was pounded into flour and mixed with a portion of maple sugar; in which condition it not only made a very palatable and nutritious food, but was so light that sufficient could be carried in the bear or deer skin pocket of the hunter or warrior for many days subsistence.

Gìs-tät-he-o Gä-yä-ah, or FAWN SKIN BAG.

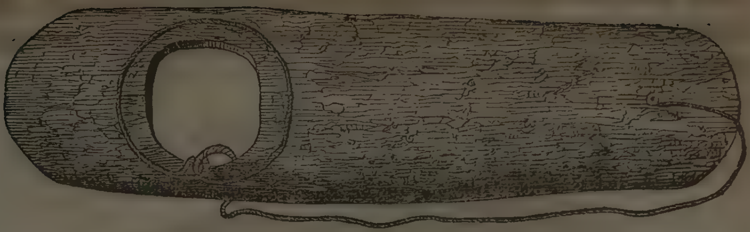
No. 62.



Bags or pockets of this description, made of the skins of animals, were in constant use among the Iroquois in ancient times. They were hung to the girdle of the warrior and the hunter, and would contain within their narrow folds sufficient subsistence for a long expedition, thus answering very perfectly the purposes of the knapsack. At home they were used as repositories for the safe keeping of choice articles. Occasionally these pockets were made of the skin of the speckled fawn, a fine specimen of which is given on plate 7.

BIRD TRAP.

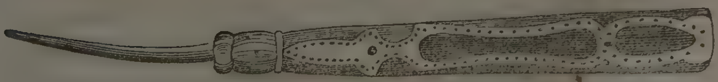
No. 891-2.



Trapping game of all kinds, from the bear and deer to the quail and snipe, was a common practice. For deer, a young tree was bent over and held in this position by the mechanism of the trap. When sprung a noose was fastened around the hind leg of the deer, and he was drawn up in the air by the unsprung tree. Bear traps were constructed in such a way as to let down a heavy timber upon the back of the animal, when sprung, and thus pin him to the earth. Nets of bark twine were also spread for pigeons and quails. An attempt was made to procure models of these traps, but the project failed for the present year. A simple bird trap, however, for small birds, will be found in the collection. It consists of a rounding strip of elm bark about eight inches long by four wide, with an eye cut in one end and a piece of bark twine with a noose at the end of it, attached to the other. After the bark is secured upon the ground, a few kernels of corn are dropped through the eye upon the ground, and the noose adjusted around it. When a bird attempts to pick up the corn the ruffled plumage of the neck takes up the string, and brings the noose around the neck, which is tightened the moment the bird attempts to fly, and either strangles or holds it in captivity. The trap is said to be very successful.

Gä-wä. OR MOCCASIN AWL.

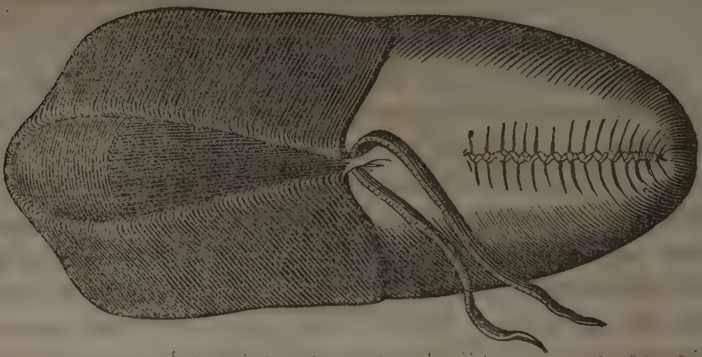
No. 59.



In ancient times the moccasin awl was a small bone about five inches in length taken near the ankle joint of the deer. But in later days they have substituted a metalic point, inserting it however in a bone handle. These handles are often carved with such care and labor as to make them tasteful implements. In sewing deer skin either with sinew, or deer strings, or bark thread, the Iroquois women are very expert.

Ah-tä-quä-o-weh, or MOCCASIN.

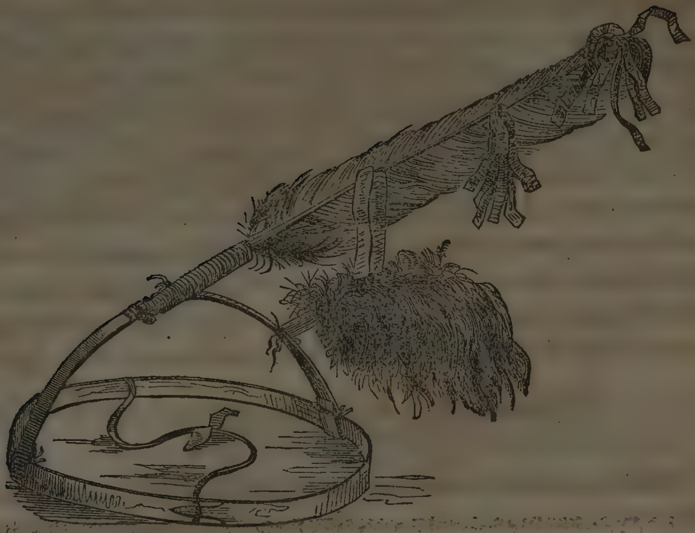
No. 33.



In the common moccasin the side pieces instead of folding down rise above the ankle, and are secured with strings. Many of the Iroquois both male and female, and especially the elders, still cling to the moccasin as the most acceptable protection for the foot; and wear it plain, as represented in the figure, as a part of their daily apparel. The bottom and sides are without seams, the only ones being on the instep in front, and up the heel behind. In the figure the moccasin is thrown out of shape by being flattened on the side. When in actual use the thickness of the moccasin would be the thickness of the foot. Two specimens of the plain moccasin are furnished, one from Canada and the other from Tonawanda.

Gus-to-weh, OR HEAD DRESS.

No. 58.



This figure is introduce to show the skeleton or frame of the Iroquois head dress, which, when completed, is the most striking feature of their costume. It is made of splint in the manner represented, except that in some instances another band arches over from side to side. The large feather revolves in the tube in which it is inserted. It was obtained of a Seneca on Grand river.

Gä-kä-ah, OR KILT.

No. 27. Plate 9.

The ancient male costume of the Iroquois consisted, in its principal parts, of the moccasin made plain; deer skin leggins made plain, setting tight to the legs, and rising considerably above the knees; the Gä-kä, or breech cloth also of deer skin, worn about the loins; and a bear or deer skin blanket. This is especially the present daily costume of the wild tribes, which roam over the plains in and beyond the Indian territory, and west of the Mississippi States; and was, doubtless, the primitive costume of the whole Indian family. The first innovation among the Iroquois was the introduction of cotton shirts, after their intercourse commenced with the Dutch and English. With the use of the shirt the *Gä-kä* was laid aside; and soon afterwards blankets of skin gave place to those of woolen, which were supplied by the traders. At a later period the pantaloon was substituted for the leggin, and the woolen blanket was made into a frock coat. The ancient Iroquois male costume is now retained only as an apparel for the dance. The kilt is of modern introduction among them, and never was used except in the dance. At an early day, when the *Gä-kä* was in universal use, the kilt was not even worn for this purpose. It is difficult to determine from whom it came, but it has become the favorite part of their dancing costume. The kilt shown in the plate, is a superb specimen made of white buckskin embroidered with bead work. It is secured around the waist by a belt, and falls down to the knees. The plate itself will supersede the necessity of any description; making it only necessary to add, that this article is of Seneca manufacture.

Got-ko-on-dä Gise-hă, OR DEER SKIN LEGGIN.

No. 23. Plate 10.

This leggin is a pure Indian article made after the antique fashion. It is made of brown colored deer skin tanned in the Indian manner, designed to set tight to the skin, and to rise above the knee. Upon the projecting edge, which is worn in front, a porcupine quill border is worked in the ancient style. This leggin is a reproduction of that worn before the kilt came into use, when the leggin rose higher than at present.

Ah-tä-quä-o-weh, OR MOCCASIN.

No. 31. Plate 11.

O-ha-dä, OR PORCUPINE QUILL.

No. 109. Plate 14. No. 1.

Both the male and female moccasin were introduced in the last report; but they were chiefly embroidered with bead work. The moccasin represented in the plate is such a beautiful specimen of porcupine quill work, that it will justify an equal illustration. The porcupine (*Gä-ha-dä*) is covered with a species of quill perfectly round, without down or feather, and terminating in a sharp point. The small quills are from one to four inches in length, and are white with the exception of the tip ends or about one fifth of the quills, which are of a dark brown color, and give to the animal its dark appearance. After being picked and seasoned they are colored red, blue and yellow by artificial dyes, (see fig. 24, plate 12,) and then used in connection with the white ones. For heavy border work the quills are moistened and flattened down, and in that form are used, as will be seen in the plate; but for vine or figure work, a thread is stitched through the deer skin and around the quill, and drawn down so as to compress it. This process is repeated at intervals, the quill being bent between the stitches. No patterns are used to work from, the eye and the taste being the principal guides. In combining colors much taste is displayed.

Yunt-ka-to-dă-tà, OR DEER SKIN SHOULDER BELT.

No. 30. Plate 12.

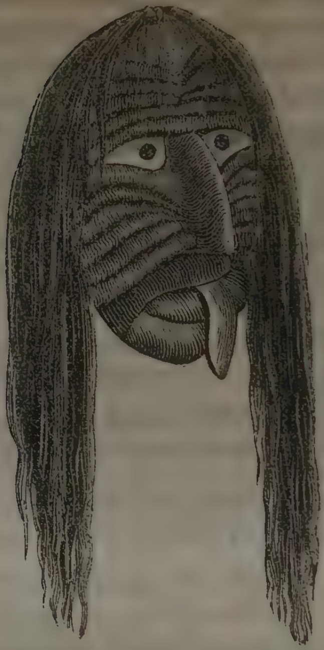
Da-yunt-wâ-hos-tā, OR DEER SKIN WAIST BELT.

No. 29. Plate 13.

Whether the practice of wearing a belt over the left shoulder was a primitive custom of the Iroquois, or an imitation of the corresponding article in our own military costume is uncertain; but the latter seems to be probable. At an early day these belts were worn, made of deer skin worked with porcupine quills like the one represented in the plate. Having been passed over the left shoulder and across the chest diagonally to the waist belt on the right side it was there secured. The waist belt was a narrow strip of deer skin embroidered in the same manner. It was put on like the bead and worsted belt, with the centre in front, the belt being passed around the body from before back, and the ends brought around in front again to be tied, in order that the ornamented part might occupy a conspicuous place.

Gā-go-sā, OF FALSE FACE.

No. 73.



The tendency of the Iroquois to superstitious beliefs is especially exemplified in their notion of the existence of a race of supernatural beings whom they call Falsefaces. This belief has prevailed among them from the most remote period, and still continues its hold upon the Indian mind. The Falsefaces are believed to be evil spirits or demons without bodies, arms or limbs, simply faces, and those, of the most hideous description. It is pretended that when seen they are usually in the most retired places, darting from point to point, and perhaps from tree to tree, by some mysterious power; and possessed of a look so frightful and demoniacal as to paralyze all who behold them. They are supposed also to have power to send plagues and pestilence among men, as well as to devour their bodies when found, for which reasons they were held in the highest terror. To this day there are large numbers of the Iroquois who believe implicitly in the personal existence of these demons.

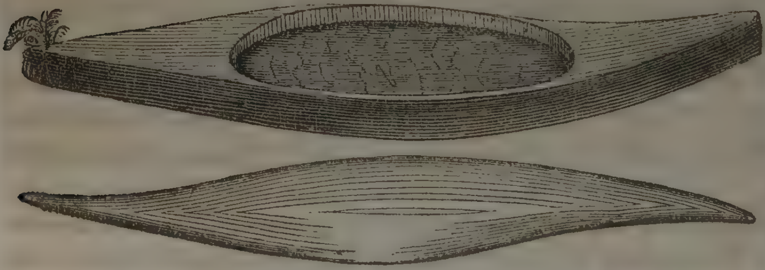
Upon this belief was founded a regular secret organization called the Falseface band, members of which can now be found in every Iroquois village both in this State and Canada, where the old modes of life are still preserved. This society has a species of initiation, and regular forms, ceremonies and dances. In acquiring or relinquishing a membership their superstitious notions were still further illustrated, for it depended entirely upon the omen of a dream. If any one dreamed he was a Falseface, it was only necessary to signify his dream to the proper person, and give a feast, to be at once initiated; and so any one dreaming that he had ceased to be a False face, had but to make known his dream and give a similar entertainment to effect his exodus. In no other way could a membership be acquired or surrendered. Upon all occasions on which the members appeared in character they wore False-faces of the kind represented in the figure, the masks being diversified in color, style and configuration, but all agreeing in their equally hideous appearance. The members were all males save one, who was a female, and the Mistress of the Band. She was called *Gā-go-sā Ho-nun-nas-tase-tā*, or the keeper of the Falsefaces; and not only had charge of the regalia of the band, but was the only organ of communication with the members, for their names continued unknown.

The prime motive in the establishment of this organization was to propitiate those demons called Falsefaces, and among other good results to arrest pestilence and disease. In course of time the band itself was believed to have a species of control over diseases, and over the healing art; and they are often invoked for the cure of simple diseases, and to drive away, or exorcise the plague, if it had actually broken out in their midst. As recently as the summer of 1849, when the cholera prevailed through the State, the Falsefaces, in appropriate costume, went from house to house at Tonawanda, through the old school portion of the village, and performed the usual ceremonies prescribed for the expulsion of the pestilence.

When any one was sick with a complaint within the range of their healing powers, and dreamed that he saw a Falseface, this was interpreted to signify that through their instrumentality he was to be cured. Having informed the mistress of the band, and prepared the customary feast, the Falsefaces at once appeared, preceded by their female leader, and marching in Indian file. Each one wore a mask or falseface, a tattered blanket over his shoulders, and carried a turtle shell rattle in his hand. On entering the house of the invalid they first stirred the ashes upon the hearth, and then sprinkled the patient over with hot ashes until his head and hair were covered; after which they performed some manipulations over him in turn, and finally lead him around with them in the falseface dance (*Gă-go-sā*), with which their ceremonies concluded. When these performances were over, the entertainment prepared for the occasion was distributed to the band, and by them carried away for their private feasting, as they never unmasked themselves before the people. Among the simple complaints which the Falsefaces could cure infallibly, were nose bleed, toothache, swellings, and inflammation of the eyes. The falseface shown in the figure was purchased of an Onondaga on Grand river; the other one in the collection came from Tonawanda.

Da-ya-no-tā-yen-dā-quā, or SNOW BOAT.

No. 111.



Top view.

Bottom view.

☞With the snow boat was played one of the winter games of the Iroquois, in which the strife was to discover which boat would run the farthest in an iced trench or path. The boat was about fifteen inches in length, and made of beech, or other hard wood, something in the fashion of a canoe. It was solid, with the exception of an oblong cavity in the centre, over which arched a hickory bow, designed to suspend bells or other rattles upon.

In the stern of this little vessel a white feather was inserted for a flag, by which to follow it in its descent. On the bottom the boat was rounded, but with a slight wind lengthwise, as shown in the figure, to give it a true direction.

A side hill with an open plain below was the kind of place selected to try the speed of the boats. Trenches in a straight line down the hill, and about a foot wide, were made by treading down the snow; after which water was poured into them that it might freeze and line the trenches throughout their whole extent with ice. These trenches to the number of a dozen, side by side, if as many individuals intended to play, were finished with the greatest care and exactness, not only down the hill side, but to a considerable distance across the plain below. At the same time the boats themselves were dipped in water that they might also be coated with ice.

The people divided by tribes in playing this, as in all other Iroquois games; the Wolf, Bear, Beaver and Turtle tribes playing against the Deer, Snipe, Heron and Hawk. At the time appointed the people assembled at the base of the hill and divided off by tribes, and then commenced betting upon the result, a custom universally practised on such occasions. The game was played by select players who were stationed at the top of the hill, each with two or three boats, and standing at the head of his own trench. When all was in readiness the boats were started off together at the appointed moment, and their rapid descent was watched with eager interest by the people below. It is not necessary to describe the scene. If the game was twenty it would be continued until one side had made that number of points. A count of one was made for every boat which led all upon the adverse side, so that if there were six players on a side it was possible for that number to be made at one trial. On the contrary, if all the boats but one upon one side were in advance of all on the adverse side but one, and the latter was in advance of all, this head boat would win and count one. The principles of the game are precisely the same as in the Snow Snake game described in the last report. All of these Indian games were played with great zeal and enthusiasm. To us they appear to be puerile amusements for men in the prime of manhood; but yet they were adapted to the ways and habits of a people living without arts, and without the intellectual employments which pertain to civilized life. Such games mark the infancy of the human mind, but they often beget a generous emulation and a ready skill which lead to future improvement and elevation.

Gă-no-sā, or conch shell breast plate.

No. 48. Plate 14. Fig. 2.

Breast plates of this description were much worn in ancient times. The leading chiefs of the Iroquois wore medals either of silver or sea shell on public occasions. This medal is in the common form, and is chiefly interesting as the personal ornament of Peter Fish Carrier, (So-ace) a Cayuga Chief about 60 years of age, now residing on Grand river. He is the only surviving son of the distinguished Cayuga chief (*Ho-jă-ga-ta*,) who bore the name of Fish Carrier, and who resided at Cannoga on the Cayuga lake during the period of the revolution. A reservation was set apart for his special benefit at this place, by the treaty of 1795, made at the Cayuga bridge. He died near Buffalo about the year 1800, after which his family removed to Grand river.

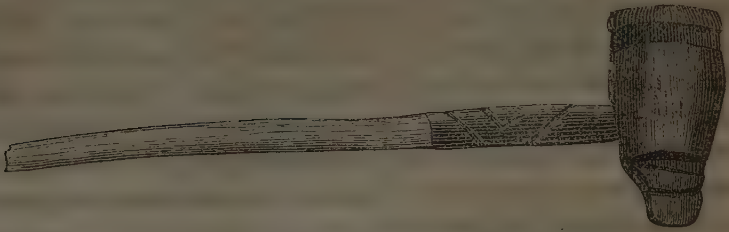
Ah-dā-dis-hă, or cane.

No. 49.

This cane is also chiefly interesting as a memento of the most distinguished living sachem of the Cayugas, John Jacobs, (*Jote-ho-weh-ko*,) now about eighty years of age, and residing upon Grand river. He was born about the year 1770, at the chief village of the Cayugas *Gă-yă-gā-an-ha*, which was situated upon the north side of Utts creek, about one and a half miles from the Cayuga lake, and about four miles north east from Aurora. When General Sullivan was on his return from the invasion of the Seneca territory in 1779, he sent a detachment into Cayuga county to destroy the villages of the Cayugas. The people fled to Niagara, and *Jote-ho-weh-ko*, then a small lad, was carried by his family. At a subsequent day he returned to his former home and resided there until the Cayugas finally disposed of all their lands to the State and emigrated. His family removed to Grand river where at a subsequent day he was made one of the ten Cayuga sachems, as his name indicates. The cane itself is curious as a specimen of Indian carving, it being wreathed with serpents. It has been used by *Jote-ho-weh-ko* for many years, and was obtained of him for the collection in October last on Grand river.

Ah-so-quā-tā, OF PIPE.

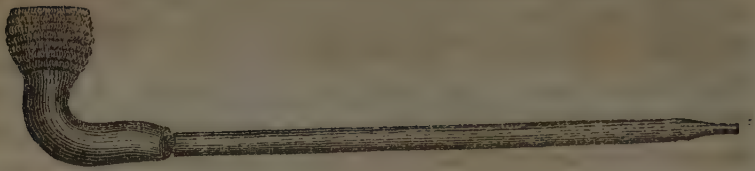
No. 50.



The pipe represented in the figure is made of a soft red stone, called Catlinite, or the Missouri pipe stone, that State being the chief, if not the only place, in which it is found. It is in common use among the western Indians for making the calumet, and also for common pipes. Like soap stone, which was much used by the Iroquois for the same purpose, it can be fashioned into pipes without the aid of metalic instruments. There is a tradition in relation to this pipe that it was taken from a Sioux many years ago by a Seneca, in one of the many inroads of the Senecas into the territories of the former people. It bears decisive marks of its antiquity, and also of severe usage, for the original orifice in which the stone piece was inserted has been taken away, and a new one made above in which the present stone is fastened. It was obtained of a Seneca.

Ah-so-quā-tā, OF PIPE.

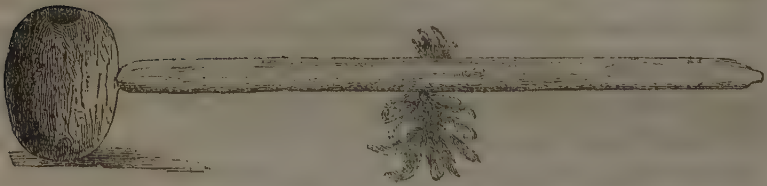
No. 50.



This pipe is made of stone; but without the stem piece it is in the exact fashion of the ancient earthen pipe of the Iroquois. As the stone is intensely hard it is difficult to say how it was drilled out. Stone implements are often found of Indian manufacture, some of which are bored with great regularity. It has been supposed that the boring was done by means of a reed made to revolve back and forth by hand, and sand employed to do the cutting. Nothing is known of the origin or manufacture of this pipe; it was purchased of a Mohawk on Grand river.

STONE PIPE MADE OF NODULE.

No. 52.

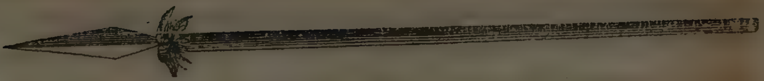


4 feet

Among the western Indians large pipe bowls with long stems, ornamented in various ways, and called calumets, are very common; but among the Iroquois the pipe was usually short, and without a stem piece. Fancy pipes are occasionally to be met with, like the one represented in the figure, having a long stem piece and a huge bowl. In this case the bowl is a nodule of stone, with a rough exterior, weighing about a pound; and has been drilled out by artificial means. The handle is of wood colored black and perforated by means of wire. A cluster of feathers depends from the centre of the handle. It was procured from a Seneca at Tonawanda.

Gā-re-gwă, or SPEAR.

No. 64.

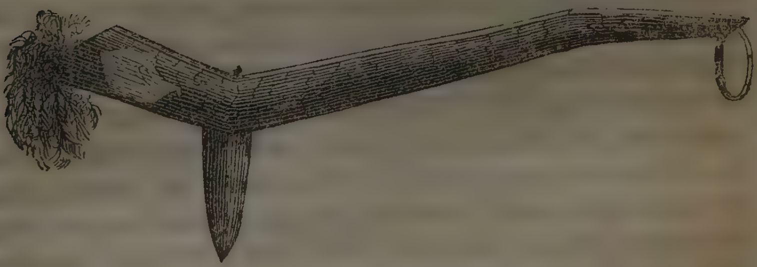


5 feet.

The spear is not an Iroquois weapon; although in later years articles of this description of American manufacture have sometimes been found among them. They had no name in their language for spear, until it became necessary to give one to the foreign weapon. The one figured above was purchased of an Onondaga on Grand river, and is said to have been used in the last war between the United States and Great Britain.

Gä-ne-a-ga-o-dus-ha, or WAR CLUB.

No. 65.



The deer horn war club was one of the ancient weapons of the Iroquois at the period of their discovery. In some instances in later times a steel blade was substituted for the deer horn, as in the above specimen, thus rendering it a more deadly weapon than formerly.

Gä-snä Gä-o-wo, or BARK CANOE.

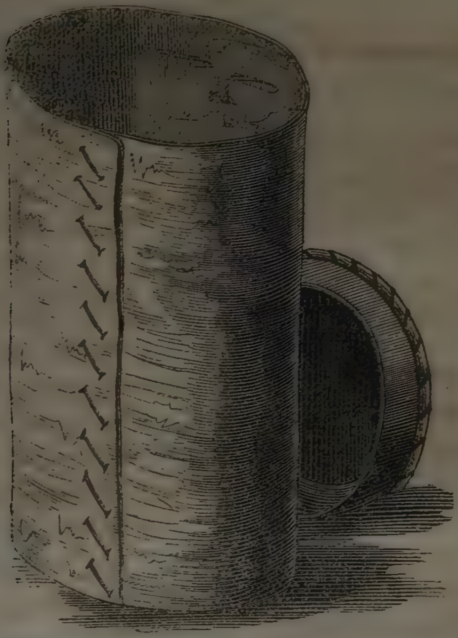
Plate 15.

In the construction of the bark canoe, the Iroquois exercised considerable taste and skill. The art appears to have been common to all the Indian races within the limits of the republic, and the mode of construction much the same. Birch bark was the best material; but as this birch did not grow within the home territories of the Iroquois, they generally used the red elm and bitternut hickory. The canoe figured in the plate is made of the bark of the red elm, and consists of but one piece. Having taken off a bark of the requisite length and width, and removed the rough outside, it was shaped in the canoe form. Rim pieces of white ash, or other elastic wood, of the width of the hand, were then run around the edge outside and in, and stitched through and through with the bark itself. In stitching they used bark thread or twine, and splints. The ribs consisted of narrow strips of ash, which were set about a foot apart along the bottom of the canoe, and having been turned up the sides, were secured under the rim. Each end of the canoe was fashioned alike, the two side pieces inclining towards each other until they united, and formed a sharp and vertical prow. In size, these canoes varied from twelve feet, with sufficient capacity to carry two men, to forty feet, with sufficient capacity for thirty. The one figured is about twenty-five feet in length, and its tonnage estimated at two tons, about half that of the bateau or river boat in use upon our inland waters before the construction of the canal. Birch bark retained its place without warping, but the elm and hickory bark canoes were exposed to this objection. After being used, they were drawn out of the water to dry. One of the chief advantages of these canoes, especially the birch bark, was their extreme lightness, which often became a matter of some moment, from the flood-wood and water-falls which obstructed the navigation of the inland rivers. Two men could easily transport these light vessels around these obstacles, and even from one river to another, when the portage was but a few miles.

For short excursions one person usually paddled the canoe, standing up in the stern; if more than two, and on a long expedition, they were seated at equal distances upon each side alternately. In the fur trade these canoes were extensively used. They coasted lakes Erie and Ontario, and turning up the Oswego river into the Oneida lake, they went up Wood Creek, and from thence over the carrying place at Rome into the Mohawk, which they descended to Schenectady. The Iroquois thus possessed a connected water route from the Hudson to Lake Superior. Their canoes would usually carry about twelve hundred pounds of fur. At the periods of the invasions of the Iroquois territories by the French, large fleets of these canoes, sometimes numbering two hundred, were formed for the conveyance of troops and provisions. With careful usage they would last several years.

Gā-snā Gā-ose-hā, or BARK BARREL.

No. 44.



The bark barrel was used to store charred and dried shell corn, beans, fruit, cured venison and other meats, and a variety of other articles. When corn was buried in pits or caches, it was usually put in bark barrels of this description. During the war of 1812, when the British forces were expected over the frontier, the Senecas at Tonawanda, who had enlisted in the American army, buried their corn in bark barrels, after the ancient custom. These barrels were made of all sizes, from those of sufficient capacity to hold three bushels, to those large enough for a peck. They are made of black ash bark, the grain being run around the barrel. Such barrels were found in every family in ancient times, and among other purposes to which they were devoted, they were made repositories for articles of apparel and personal ornaments. With proper care they would outlast the longest life.

Several specimens of bark trays and bark sap tubs will be found in the collection. These vessels are always made of red elm bark.

Gā-no, OR ARROW.

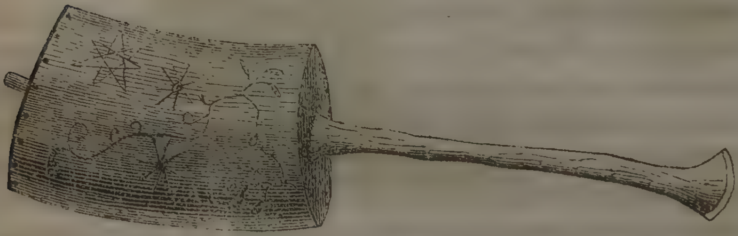
No. 69.

3 feet.

In ancient times arrows were pointed with horn or bone as well as with flint, and made even more dangerous missiles in the former cases. The above is a representation of an arrow of this description, which, with several others, was purchased of an Oneida on Grand river. It is about three feet in length and pointed with deer's horn.

O-no-gă Gus-dā-weh-să, OR HORN RATTLE.

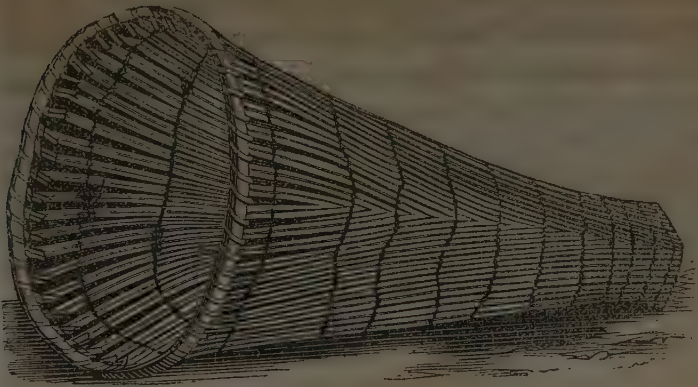
No. 57.



Various kinds of rattles were used by the Iroquois in their dances, of which, the turtle shell rattle was the most common; but occasionally, in later days, one is to be met with of this description. It was obtained of a Cayuga lad on Grand river.

Yont-kā-do-quā, OR BASKET FISH NET.

No. 79.



3 feet.

The basket net was made of splint in a conical form, about three feet in length, fifteen inches in diameter at the mouth, and six at the small end. In using it, the fisherman stood in the rapids of the creek or river, where the water rippled over the stony bottom, and with a stick or rod managed to direct the fish into the partly submerged basket, as they attempted to shoot down the rapid. When one was heard to flutter in the basket, it was at once raised from the water, and the fish was found secure within it. In those forest days, when fish abounded in every stream, it was an easy matter thus to capture them in large numbers.

Basket-making is preëminently an Indian art. It was the intention of the writer to enter into this subject somewhat minutely, and for that purpose a collection of splints in their various stages, from their condition when first taken from the tree, to those ready to be made into the most delicate baskets, was put up and arranged. But the unexpected length of this report will prevent any thing more than a passing notice. Black ash furnishes the only splint used by the Iroquois, and perhaps the same may be said of all other Indians. They choose a tree about a foot in diameter and free from limbs, after which they cut off a stick about six feet in length. After removing the bark they pound the stick with some heavy implement to start the splints, which can thus be made to run off with the utmost regularity and uniformity of thickness. This process is continued until the log is stripped down to the heart. These splints, which are about three inches wide and an eighth of an inch thick, are afterwards subdivided both ways until reduced to the required width and thickness. When resplit into thinner strips the splints have a white and smooth surface. If the baskets are to be variegated, the splints are dyed upon one side before they are woven, and are also moistened to make them pliable before they are used. The patient industry of the Indian female while engaged in this manual labor, and her skill and taste are alike exemplified in this interesting manufacture.

E-yose, or BLANKET.

No. 103 1-2. Plate 16.

In ancient times the Iroquois female costume consisted of moccasins, leggins, a deer skin skirt, and a deer or bear skin blanket dressed with the hair upon it. Since then they have adhered to the ancient costume with great fidelity so far as the articles of apparel are concerned, although they have changed the materials of which they were made. They still wear the moccasin, the leggin, the skirt and the blanket as a part of their ordinary dress; but the deer skin has been laid aside for the broadcloth and the woolen; and the porcupine quill in a great measure for the bead. We can yet discover in the broadcloth blanket, however tastefully embroidered or ribboned, the legitimate descendant of the ancient deer skin blanket. As now worn by the Indian female, the blanket is a very graceful and becoming article of apparel. It is either passed over the head and falls down around the person in natural folds, or rests upon the shoulders and is gathered like a shawl. The one shown in the plate is of the latter description. It is bordered with ribbon, the colors of which are tastefully combined, and also with beadwork, which will be more fully appreciated from the plate than from any description.

Gā-ka ah, or SKIRT.

No. 101. Plate 17.

This is without question the finest specimen of Indian beadwork ever exhibited. Next to the article itself the plate will furnish the best description. It was made by Miss Caroline G. Parker (*Gā-hā-no*), a Seneca Indian girl, now being educated in the State Normal School, to whose finished taste, and patient industry the State is indebted for most of the many beautiful specimens of beadwork embroidery now in the Indian collection.

In doing this work, the eye and the taste are the chief reliances, as they use no patterns except as they may have seen them in the works of others. In combining colors certain general rules, the result of experience and observation, are followed, but beyond them each one pursued her own fancy. They never seek for strong contrasts, but break the force of it by interposing white, that the colors may blend harmoniously. Thus light blue and pink beads, with white beads between them, is a favorable combination; dark blue and yellow, with white between, is another; red and light blue, with white between, is another; and light purple and dark purple, with white between, is a fourth. Others might be added were it necessary. If this beadwork is critically examined it will be found that these general rules are strictly observed; and in so far beadwork embroidery may be called a systematic art. The art of flowering, as they term it, is the most difficult part of beadwork, as it requires an accurate knowledge of the appearance of the flower, and the structure and condition of the plant at the stage in which it is represented. These imitations are frequently made with great delicacy, of which a very favorable exhibition may be seen in the plate, in the flower introduced at the angle of the skirt.

Gā-yā-ah, or SATCHEL.

No. 24. Plate 13.

This beautiful article is also of Seneca manufacture. Upon the lowest part of the front side (fig. 1) there is an ingenious imitation of a rose bush, with its flowers at different stages of maturity, from the one just opening its bud, to the full blown rose. The success of the imitation, considering the nature of the materials, and the artist, is quite commendable. It is easy to recognize the opening rose in the bud at the left, which, with its envelope and stem, is very accurately delineated. In flowering, dark green beads are used for the stalk of the shrub, and glass beads of various colors and tints, for the flowers.

On the reverse side of the Satchel are two stars, which as specimens of fancy beadwork are tastefully and ingeniously made. This is not an original Indian article, but a naturalized invention.

Yā-wā-o-dā-quā, OR PIN CUSHION.

Plate 19.

The plate is intended merely as a further illustration of the general character of bead work embroidery. It is of Seneca manufacture and requires no description beyond the plate itself.

Gā-nó-sote, OR BARK HOUSE.

No. 114. Plate 20.

The bark house of the Iroquois has long since given place to a more substantial structure; but occasionally in some secluded corner a *Gā-nó-sote*, may yet be seen, constructed by some one whose age or fondness for the ancient mode of life led him to prefer the light, but convenient lodge of his forefathers. The single *Gā-nó-sote* was usually about twenty feet by fifteen upon the ground, and from ten to twenty feet high. The frame consisted of upright poles firmly set in the ground, usually five upon the sides and four at the ends, including those at the corners. Upon the forks of these poles, about ten feet from the ground, cross poles were secured horizontally, to which the rafters, also poles, but more numerous and slender, were adjusted. The rafters were strengthened with transverse poles, and the whole was usually so arranged as to form an arching roof. After the frame was thus completed, it was sided up and shingled with black ash bark, the rough side out. The bark was flattened and dried, and then split in the form of boards. To hold these bark boards firmly in their places another set of poles, corresponding with those in the frame, were placed on the outside, and by means of splint and bark rope fastenings the boards were secured horizontally between them. It usually required four lengths of boards, and four courses from the ground to the rafters to cover a side, as they were lapped at the ends, as well as clapboarded; and also in the same proportions for the ends. In like manner the roof was covered with bark boards, smaller in size, with the rough side out, and the grain running up and down; the boards being stitched through and through with fastenings, and thus held between the frames of poles, as on the sides. In the centre of the roof was an opening for the smoke, the fire being upon the ground in the centre of the house, and the smoke ascending without the guidance of a chimney. At the two ends of the house were doors, either of bark hung upon hinges of wood, or of deer or bear skin suspended before the opening; and however long the house, or whatever the number of fires, these were the only entrances. Over one of these doors was usually cut or painted the tribal device of the head of the family. Within upon the two sides were arranged wide seats, also of bark boards, about two feet from the ground, well supported underneath, and reaching the entire length of the house. Upon these they spread their mats of skins, and also their blankets, using them as seats by day and couches by night. Similar berths were constructed on each side about five feet above these and secured to the frame of the house, thus furnishing accommodations for the family. An interior view of the house is given in the plate. Upon cross poles near the roof was hung in bunches, braided together by the husks, the winter supply of corn. Charred and dried corn, and beans were generally stowed in bark barrels, and laid away in corners. Their implements for the chase, weapons, articles of apparel, and miscellaneous notions were stowed away, and hung up, wherever an unoccupied corner was discovered. A house of this description would accommodate a family of eight, with the limited wants of the Indian, and afford shelter for their necessary stores, making a not uncomfortable residence.

The Iroquois resided in permanent villages. About the period of the formation of the League, when they were exposed to the inroads of hostile nations, their villages were compact and stockaded. Having run a trench several feet deep around five or ten acres of land, and thrown up the ground upon the inside, they set a continuous row of stakes or palisades in this bank of earth, fixing them at such an angle that they inclined over the trench.[1] Sometimes a village was surrounded by a double or even treble row of palisades. Within this enclosure they constructed their bark houses, which were very large and designed for several families, and in them secured their stores. Around it was the village field, consisting oftentimes of several hundred acres of cultivated land, which was subdivided into planting lots; those belonging to different families being bounded by uncultivated ridges.

But at the commencement of the seventeenth century, when their power had become consolidated, and most of the adjacent nations had been brought under subjection, the necessity of stockading their villages in a measure ceased, and with it the practice. At the period of the discovery of the inland Iroquois, about the year 1640, few, if any of the villages of the Senecas, Cayugas, or Onondagas were surrounded with palisades; but the Oneidas and Mohawks continued to stockade their villages for many years afterwards in consequence of the inroads of the French. From being compact, their villages afterwards came to be scattered over a large area, and their houses were planted, like the trees of the forest, at irregular intervals. No attempt in the modern village was made at a street, or at an arrangement of their houses in a row; two houses seldom fronting the same line. They are merely grouped together sufficiently near for a neighborhood.

As their villages at an early day were reckoned by the number of houses, it is important to notice the difference between the bark house of the ancient and of the modern period, to arrive at any estimation of the number of inhabitants in former times. When the village was scattered over a large area, the houses were single, and usually designed for one family; but when compact, as in early times, they were very large, and subdivided so as to accommodate a number of families. The long house was often over an hundred feet in length, by about sixteen in width, with partitions at intervals of about ten or twelve feet, or two lengths of the body. Each apartment was in many respects a separate house, accommodating two families, one upon each side of the fire. Sometimes there was a fire in every apartment, but more frequently for every other partition, so that one fire would answer for four families. Not unfrequently one of these houses contained from ten to twenty families, all bound together by the nearer ties of relationship, and constituting in effect one family. They carried the principle of "living in common" to its full extent. Whatever was taken in the chase, or raised in the fields, or gathered in its natural state by any member of the united families, enured to the benefit of all, for their stores of every description were common. They had regular hours for cooking through the whole establishment, and whatever was prepared was free to all. After the morning repast the Iroquois had no regular meal, but they satisfied their appetites whenever it was convenient. As they used no tables in ancient times they took their food separately, and whenever it could be done with the least trouble, the males first, and the females afterwards. There were no side doors to the long house, and as a necessary consequence there was a species of hall or avenue through the house from end to end. In constructing one of these houses, spaces were left at intervals through it for store rooms, which were open to those who were contiguous. Other peculiarities of these patriarchal households of the Iroquois might be pointed out; but sufficient has been said to give a general idea of both the single and the long house of our primitive inhabitants.

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[1] Herein is doubtless the origin of many if not all of the Trench Enclosures which are found in various parts of the State. Not all of them necessarily made by the Iroquois, but by them and the nations who preceded them in the occupancy of New-York.

A Mr. Greenhalgh, in 1677, visited the Seneca village of *Dā-yo-de-hok-to*, signifying a "bended creek," situated upon a bend of the Honeoye outlet west of Mendon, in the county of Monroe. Under the name of "Tiotohatton," he thus speaks of it:—(Doc. Hist., N. Y., vol. 1, p. 13) "Tiotohatton lies on the brink or edge of a hill; has not much cleared ground; is near the river Tiotohatton, which signifies bending. It lies to the westward of Canagorah, about thirty miles, containing about 120 houses, being the largest of all we saw, (the ordinary being from fifty to sixty feet long,) with from twelve to thirteen fires in one house. They have good store of corn growing about a mile to the northward of the town." He further states (ib. 12, 13) that Canagorah contained 150 houses, Onondaga 140, and Oneida 100. It is not improbable that the largest of the Iroquois villages in ancient times, or about the period of their discovery, contained from two to three thousand inhabitants.

It is difficult to form a correct estimate of the total number of the Iroquois at any particular period, the opinions of those, having the best opportunity of judging, have been so various. They have been rated from ten, to seventy thousand. An opinion may perhaps be indulged, without giving the statistics upon which it is founded. The period of their greatest prosperity, and of their highest military supremacy was about the year 1650; and their total population at that period may be safely placed at 25,000. A higher estimate would be better supported by such data as the case affords, than a lesser one; although the impression of later writers seems to be the contrary. An approximation to the relative strength of the several nations of the League upon this basis may be made by the following apportionment: To the Senecas 10,000; to the Cayugas 3,000; to the Onondagas 4,000; to the Oneidas 3,000; and to the Mohawks 5,000. A century later or about 1750, their total population was probably about half this number, the Mohawks having wasted away the most rapidly.

To return from this digression to the bark house from which it proceeded, it is proper to observe that among the articles furnished is the model of the original *Gä-no-sote* of the Iroquois, some six feet by four, in its ground plan, and made as large as it could be conveniently transported. The model shows very perfectly the mechanism of the bark house throughout; but it is defective in its proportions. It was designed for two fires, or four families, and therefore should be either longer or narrower, and not as high. With this criticism in mind the plate gives a faithful impression of the primitive house of the Iroquois.

The great length of this report forbids those suggestions upon the further enlargement of the Indian collection, and those reflections upon its importance, which the subject is calculated to inspire. With a fair portion of the fabrics, implements and utensils of the most gifted race of Indian lineage within the limits of our Republic, as the nucleus of a general Indian collection, the way is fairly opened by the State for successfully accomplishing an enterprise, which is both full of historical interest and worthy of its enlarged munificence. It is greatly to be hoped that the time is not distant when one collection, at least, may exist in the country, which is sufficiently general, and sufficiently minute, to illustrate the social life and the artizan intellect of the whole Indian family.

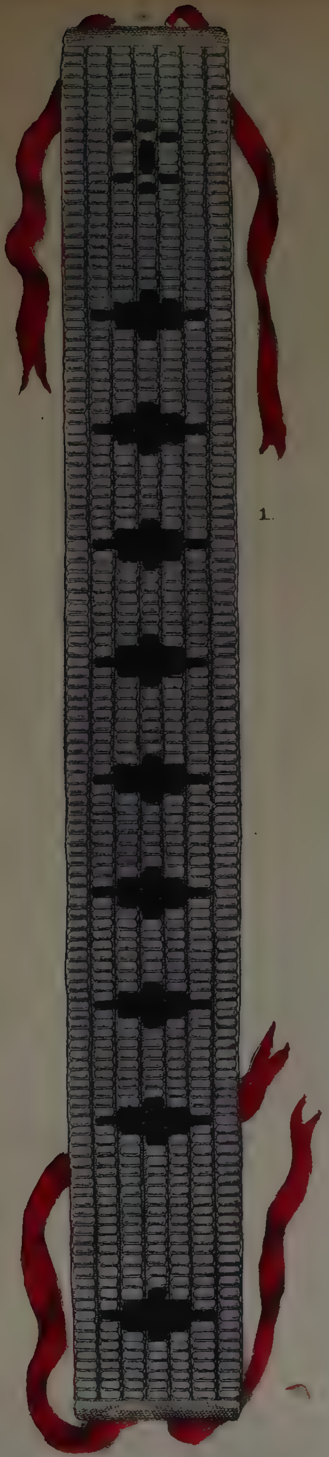
There is also a collateral consideration which cannot be overlooked. In the fabrics of the modern Iroquois there is much to inspire confidence in their teachableness in the useful arts. When their minds are unfolded by education, and their attention is attracted by habit to agricultural pursuits, as has become the case to some extent, there is great promise that a portion, at least, of this gifted race will be reclaimed, and raised, eventually, to a citizenship among ourselves. In that great work, the people of the State have a part to perform. It would be a grateful spectacle yet to behold the children of our primeval forests cultivating the fields over which their fathers roamed in sylvan independence; and worshiping that God, in the fullness of light, and knowledge, whom, in the Great Spirit, however imperfect their conceptions, they most distinctly discerned.

All which is respectfully submitted.

LEWIS H. MORGAN.

Rochester, January 22, 1851.

Pl. 1.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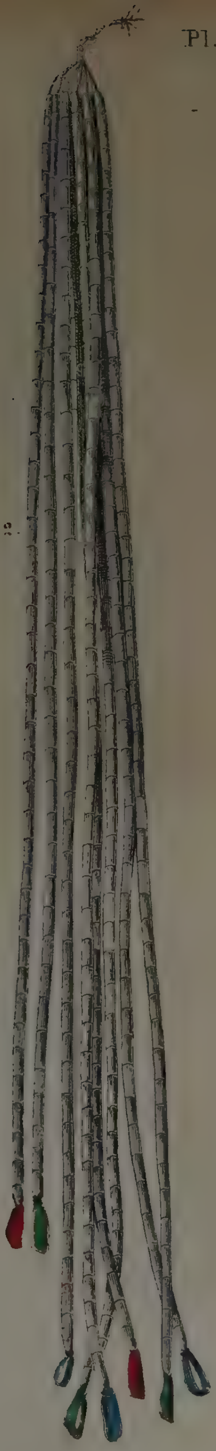
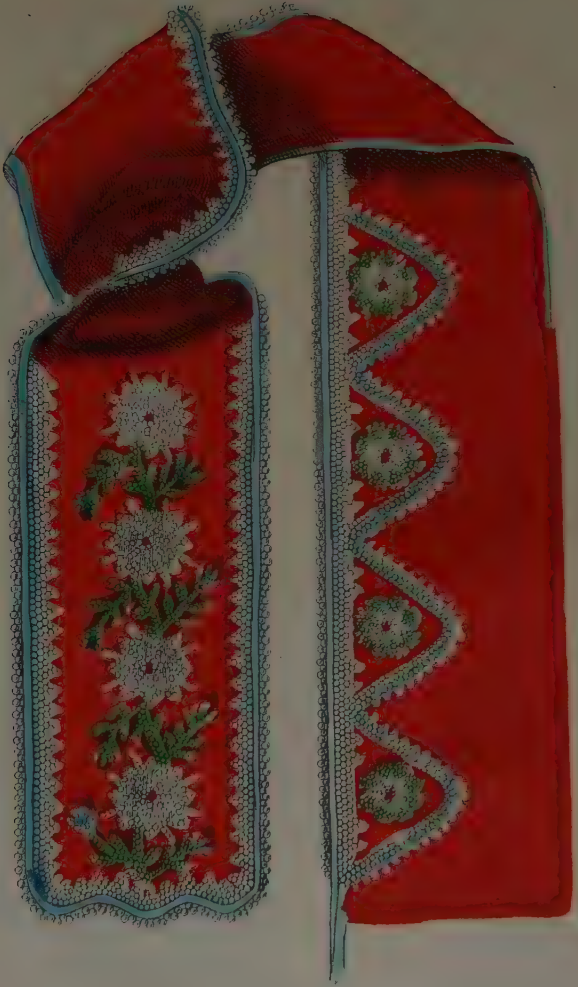
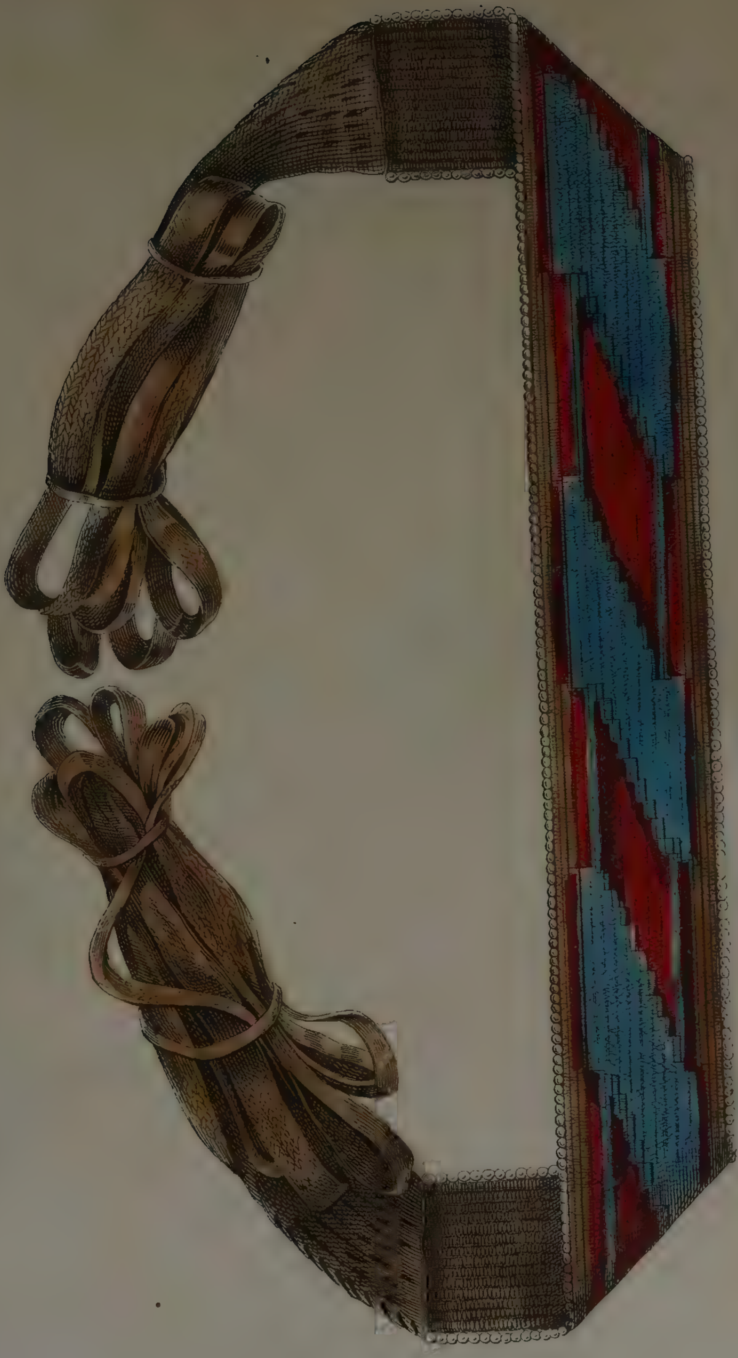

2.

1. GÄ-SWEH-TÄ OTE-KO-Ā OR BELT OF WAMPUM.

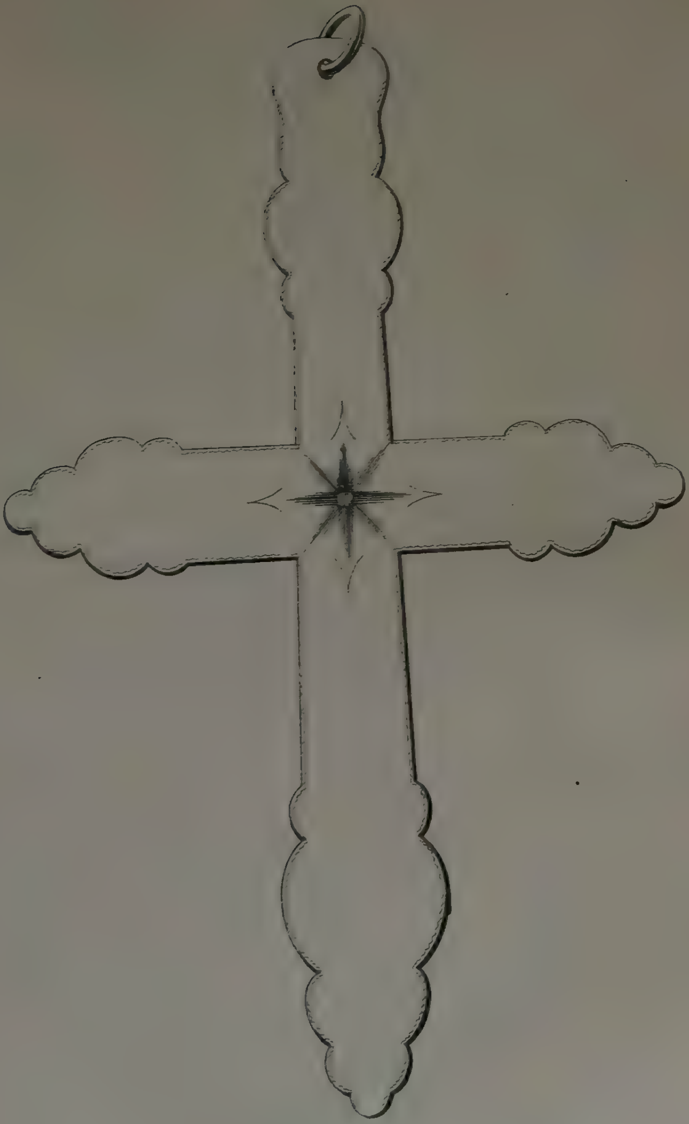
2. OTE-KO-Ă OR STRING OF WAMPUM



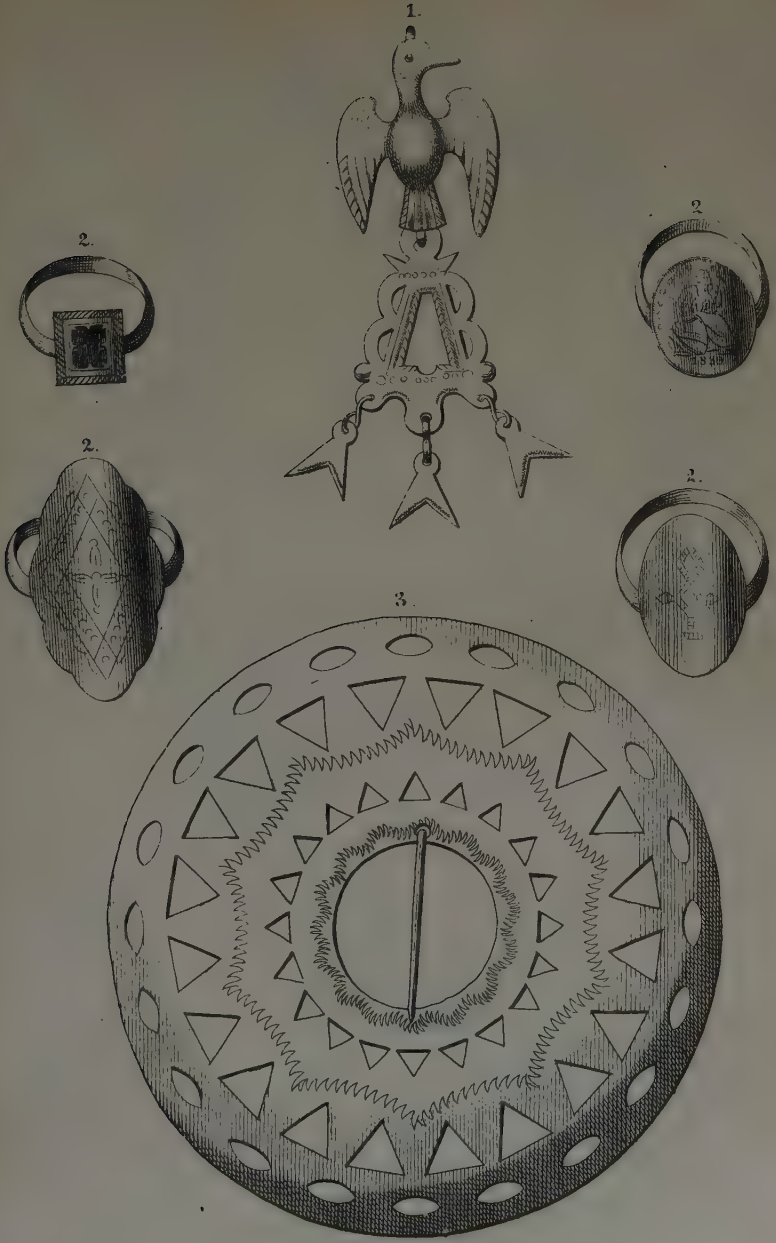
GÄ-SWÄ-HOS-HĂ OR BABY FRAME BELT



O-Ā-TA-OSE-KÄ OR MOOSE HAIR BURDEN STRAP.



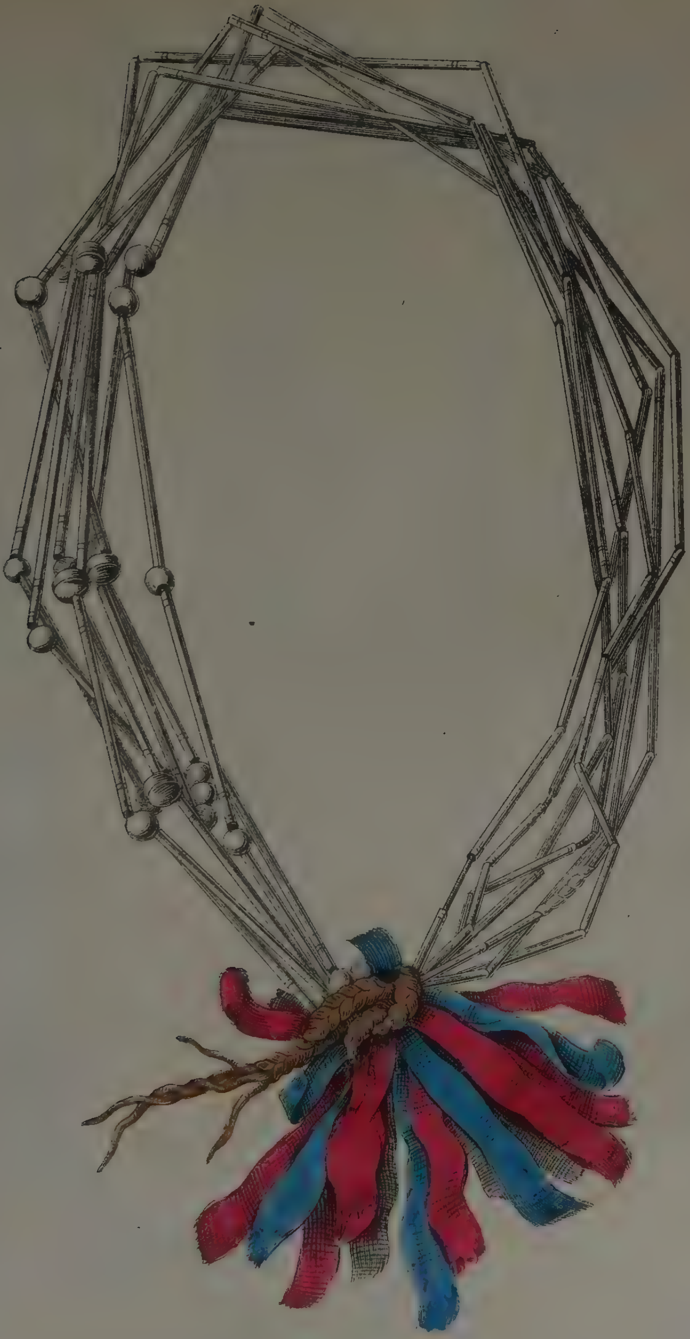
DÄ-GÄ-YÄ-SONT OR SILVER CROSS
Ten Inches long.



1. AH-WAS-HĂ OR SILVER EAR RING

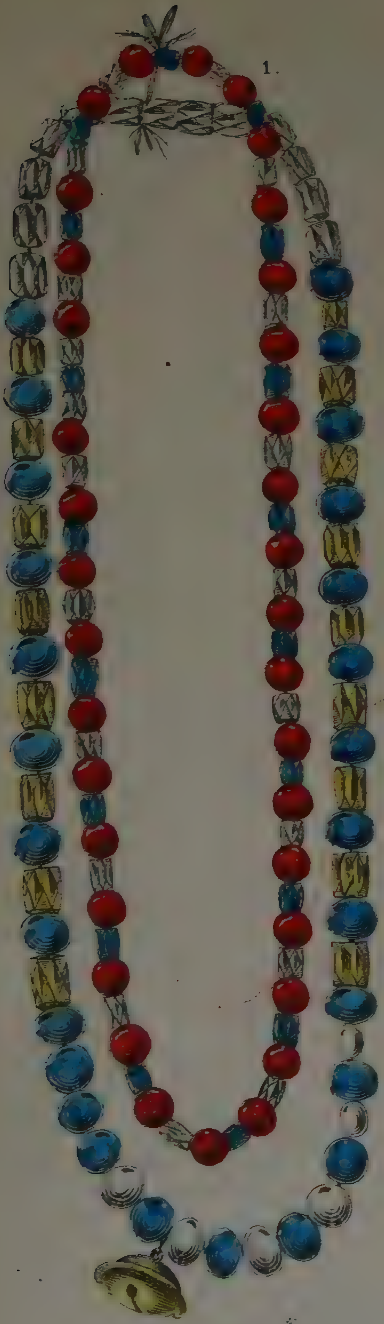
2. AH-NE-A-HUS-HĂ SILVER FINGER RINGS

3. AN-NE-ÄS-GĂ OR SILVER BROACH



OUT-WIS-TÄ-NE-UN-DÄ-QUÄ OR SILVER BEADS

1.



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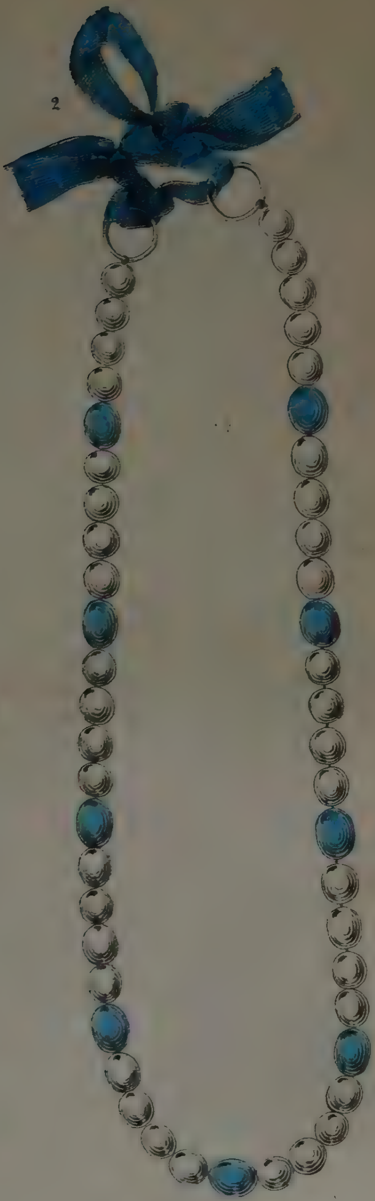
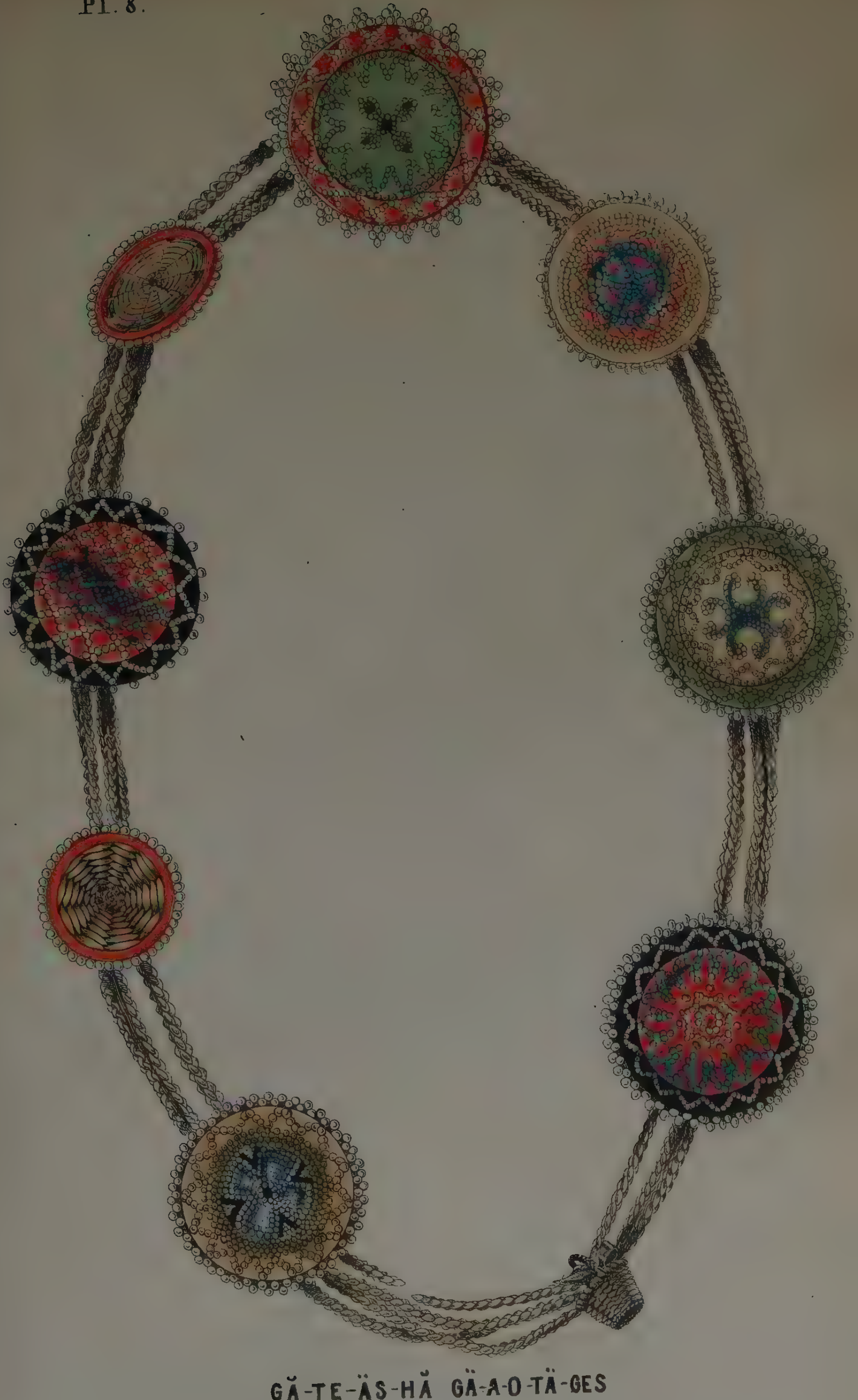
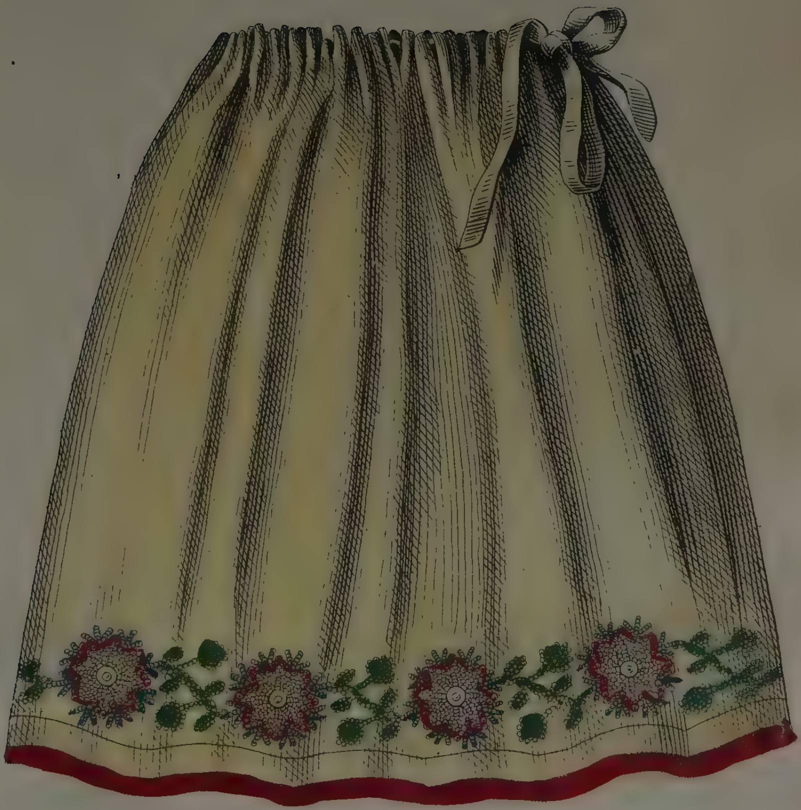


1 GĀ-TE-AS-HĂ OR GLASS BEADS.

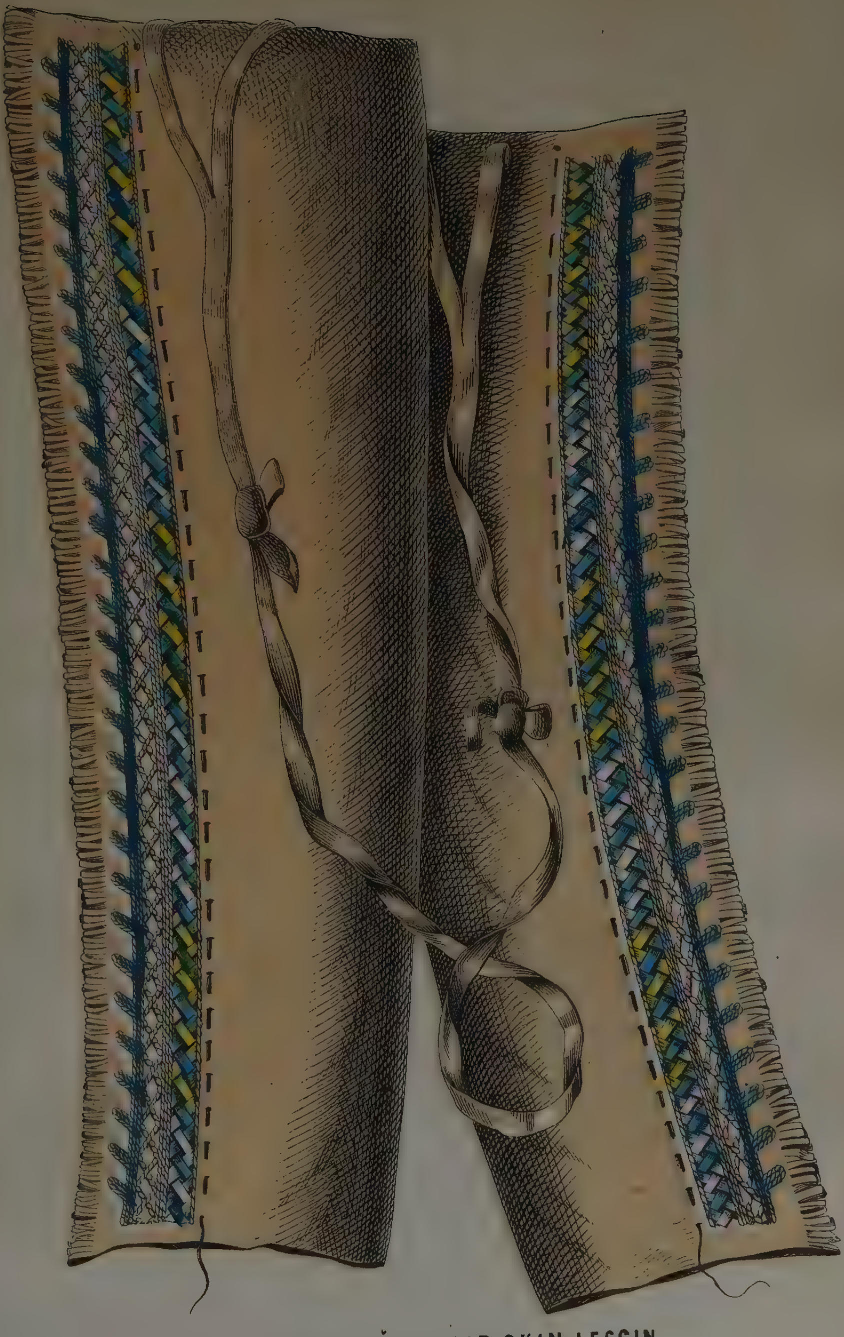
2. O-WIS-TÄ-NO-O O-STĀ-O-QUĀ OR SILVER BEADS.



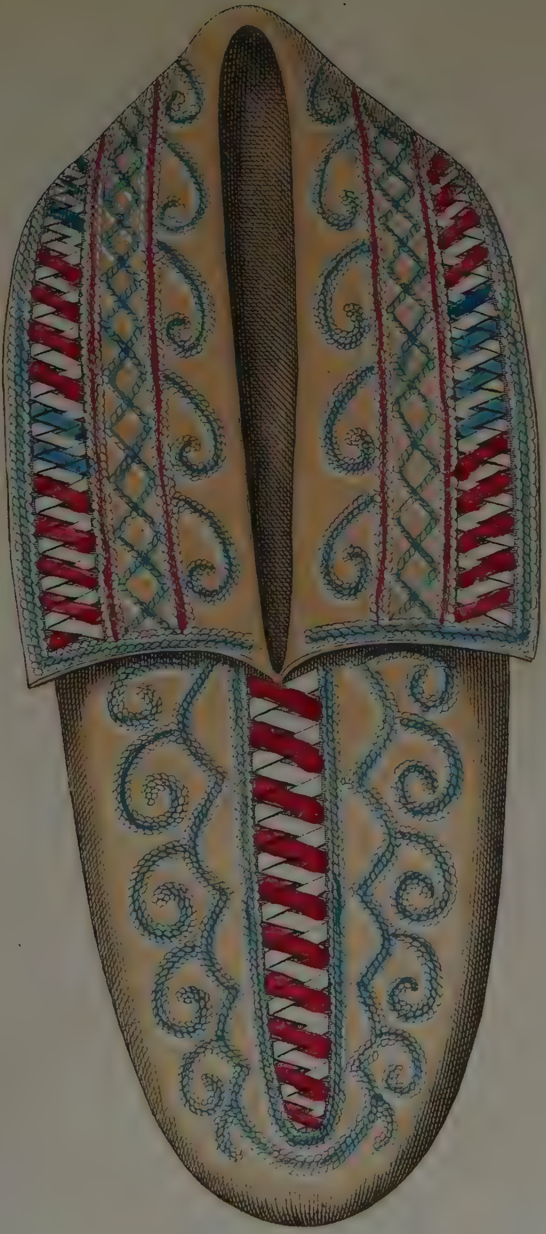
GĂ-TE-ÄS-HĂ GÄ-A-O-TÄ-GES
OR
GRASS SHOULDER ORNAMENT.



GÄ-KÄ-AH OR DEER SKIN KILT

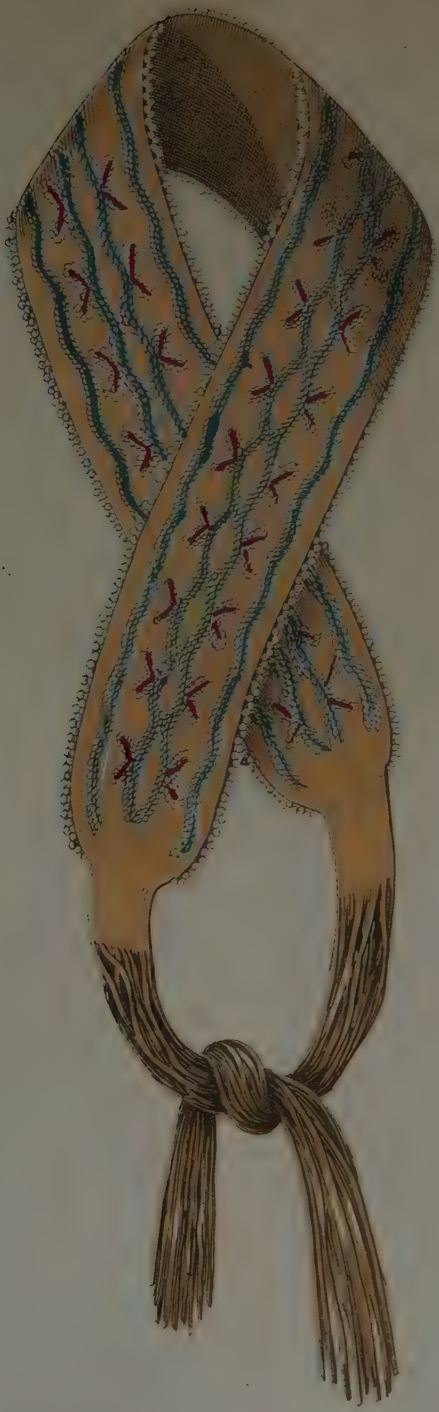


GISE-HĂ OR DEER SKIN LEGGIN.



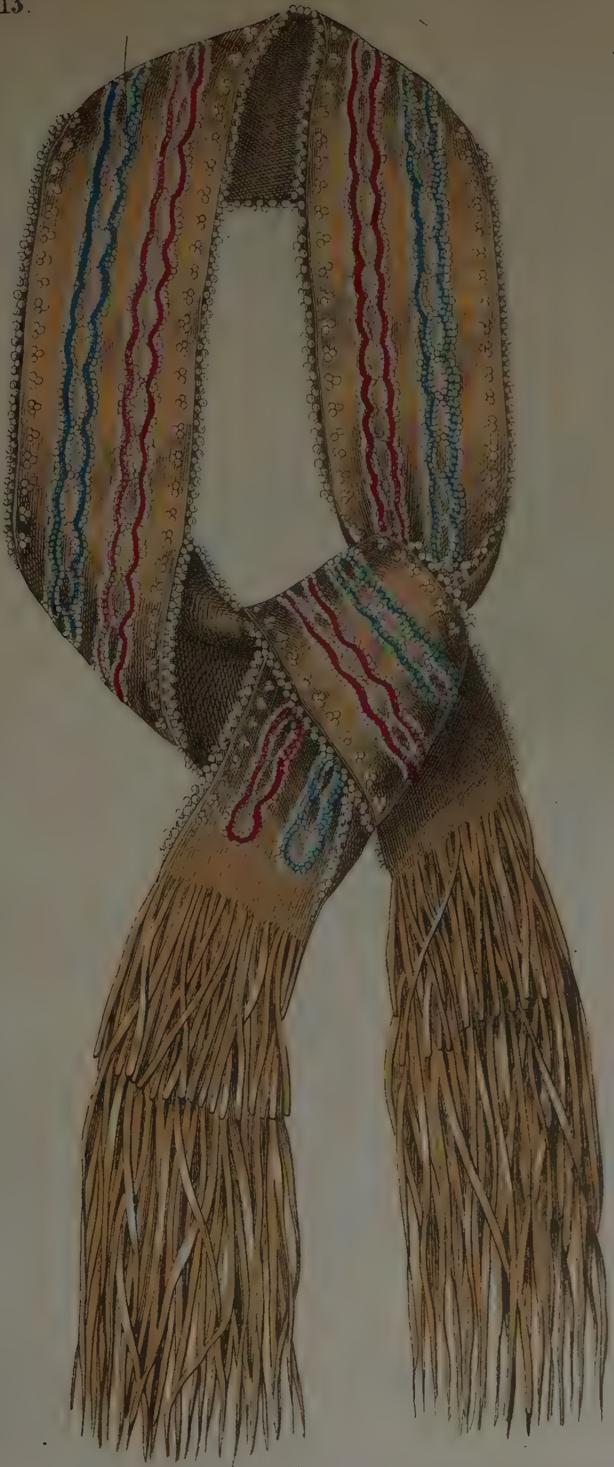
AH-TÄ-QUÄ-O-WEH OR MOCCASON
Embroidered with porcupine quills

Pl. 12.

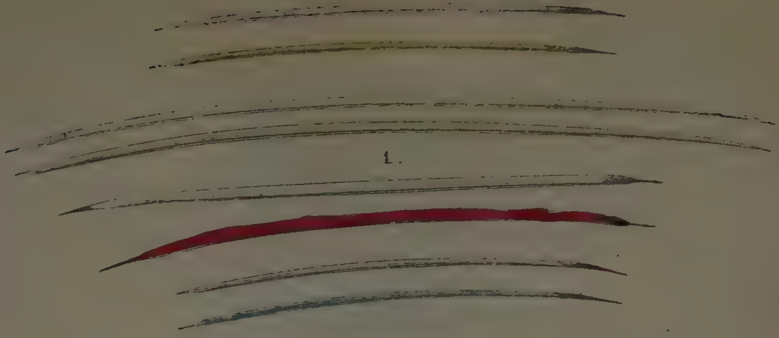


YUNT-KA-TO-DĂ-TÄ OR DEER SKIN SHOULDER BELT

Pl. 13.



DA-YUNT-WA-HOS-TÄ OR DEER SKIN WAIST BELT.



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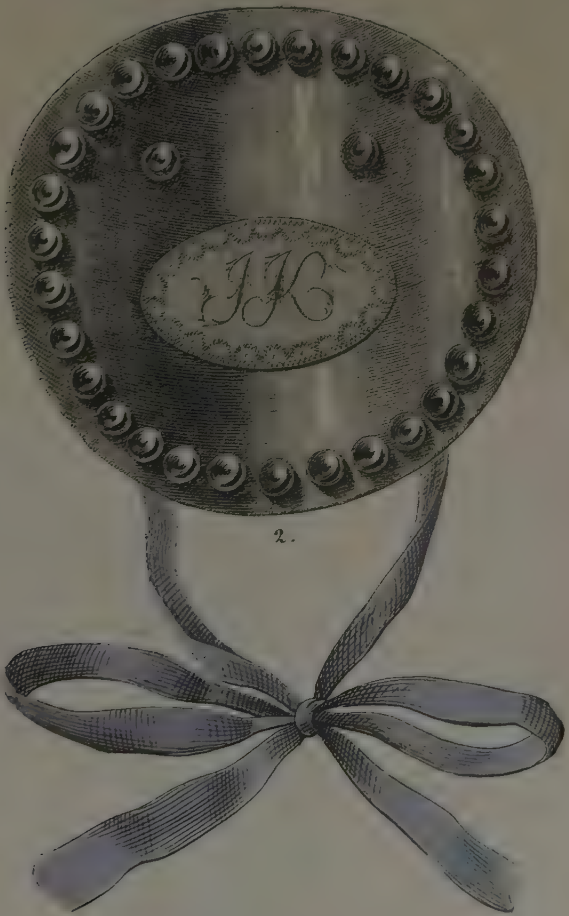
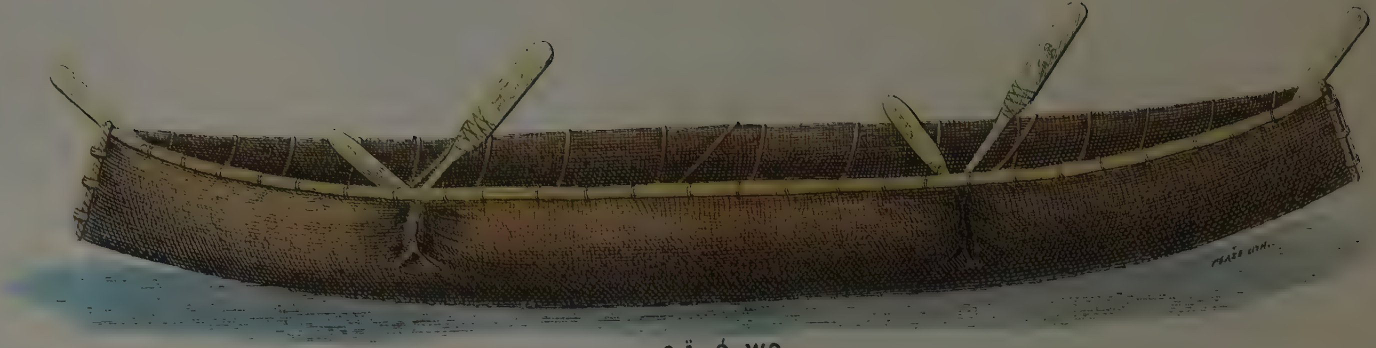


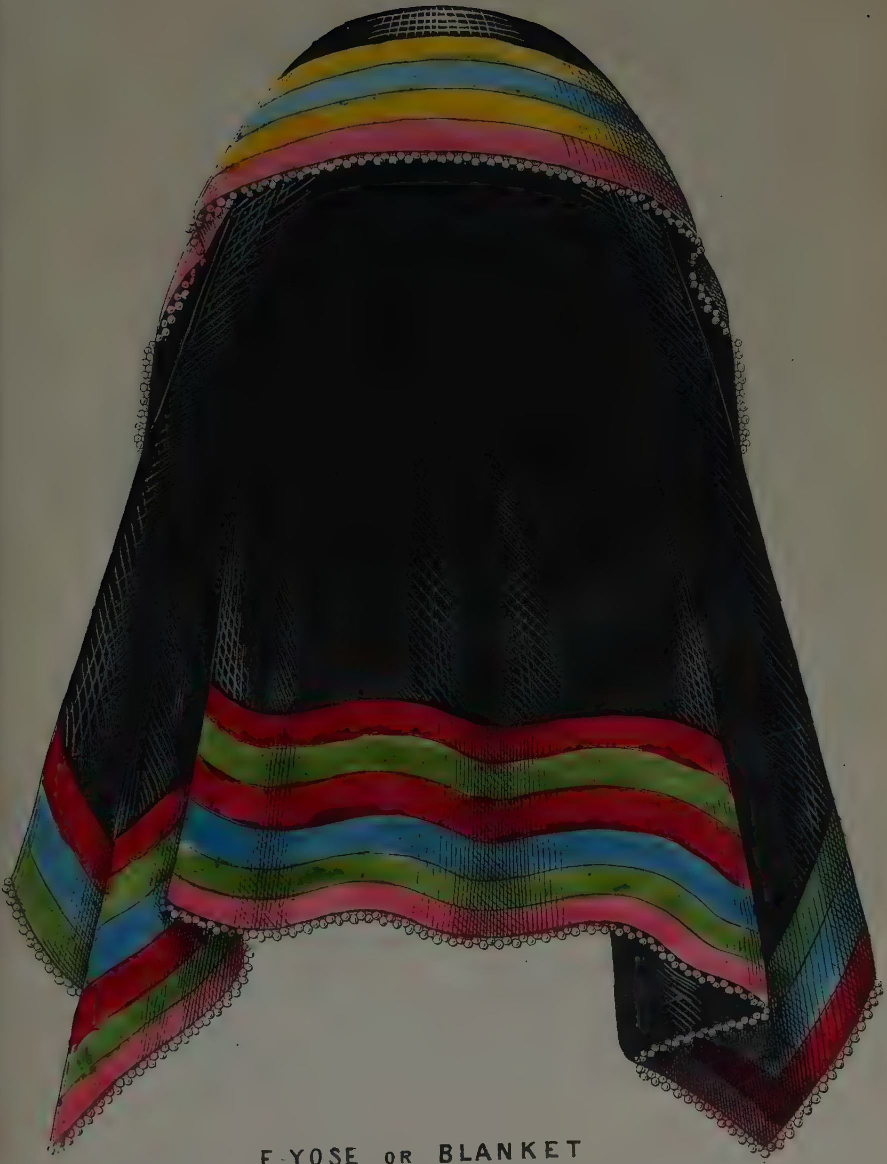
2.

1. O-HA´-DA OR PORCUPINE QUILL
2. GÄ NO-SÄ OR CONCH SHELL BREAST PLATE

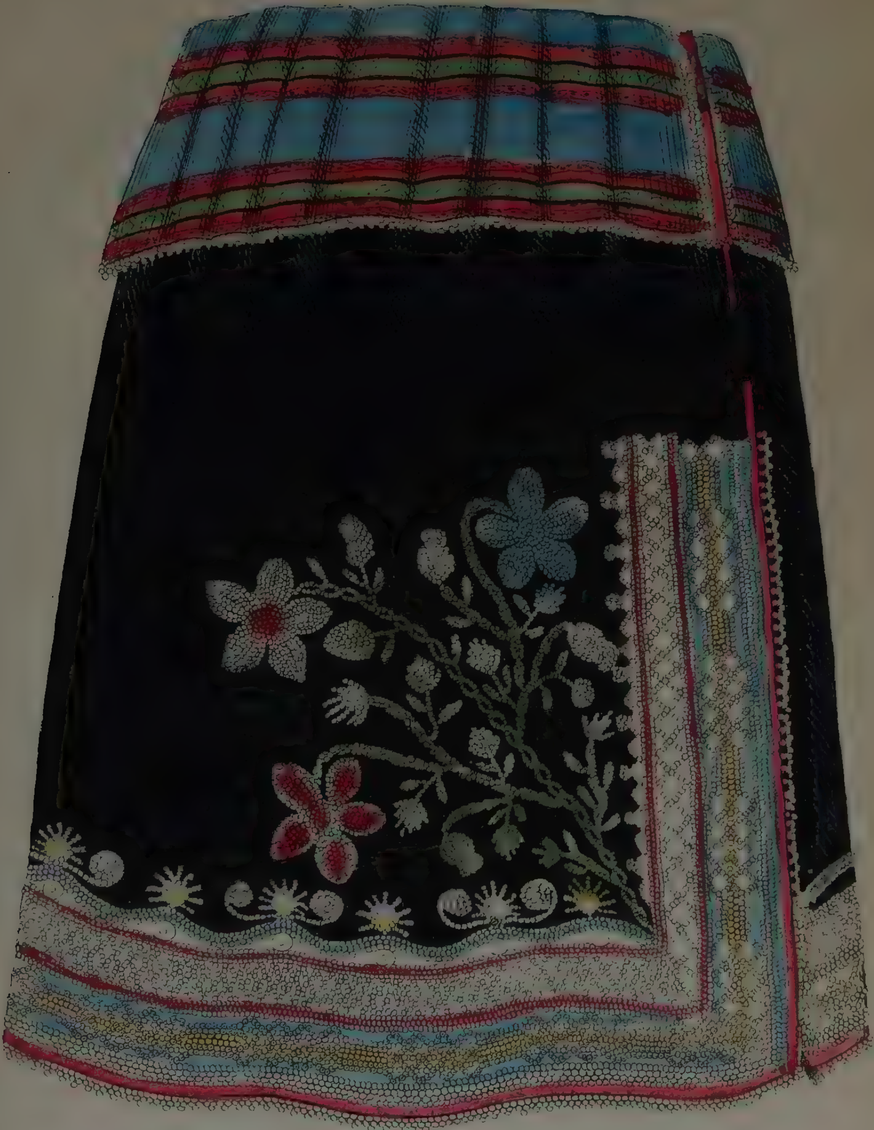
Pl.15.



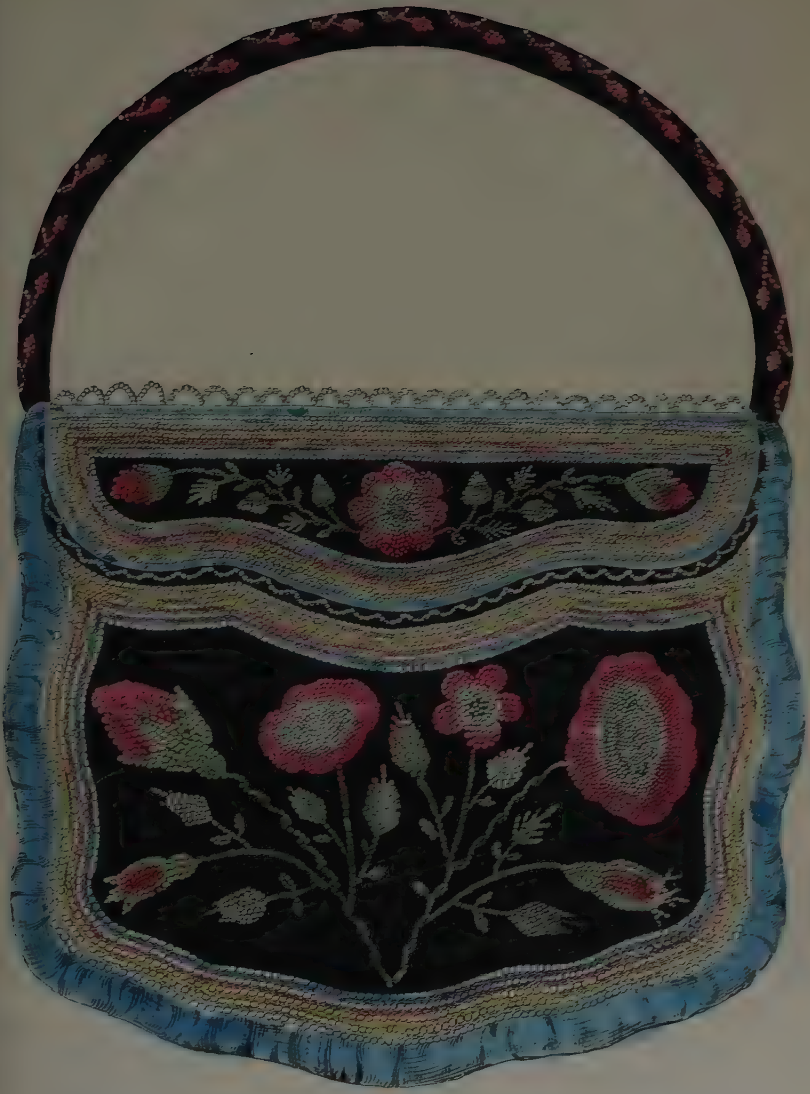
GÄ-Ó-WO
or
BARK CANOE.



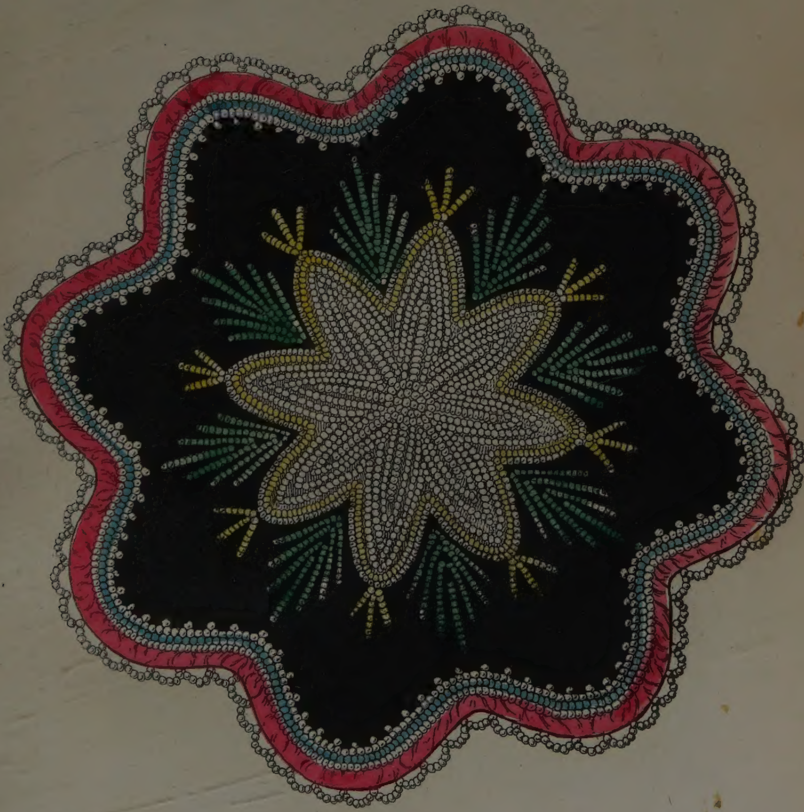
E-YOSE OR BLANKET



GÄ-KÄ-AH OR SKIRT

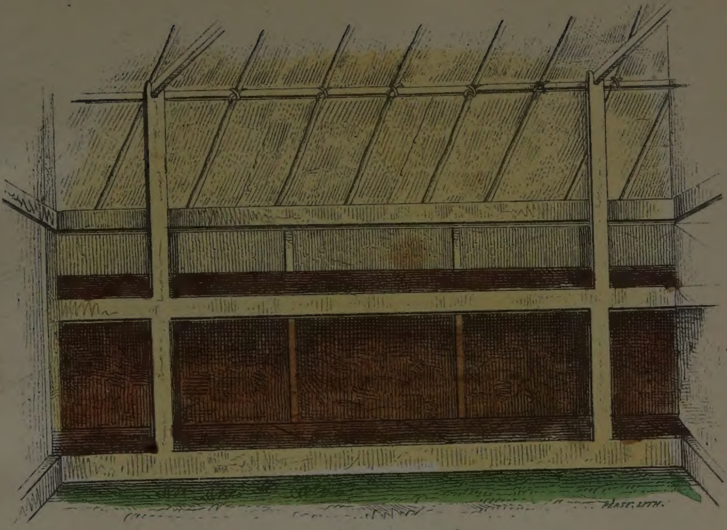


GĂ-YĂ-AH, OR SATCHEL.

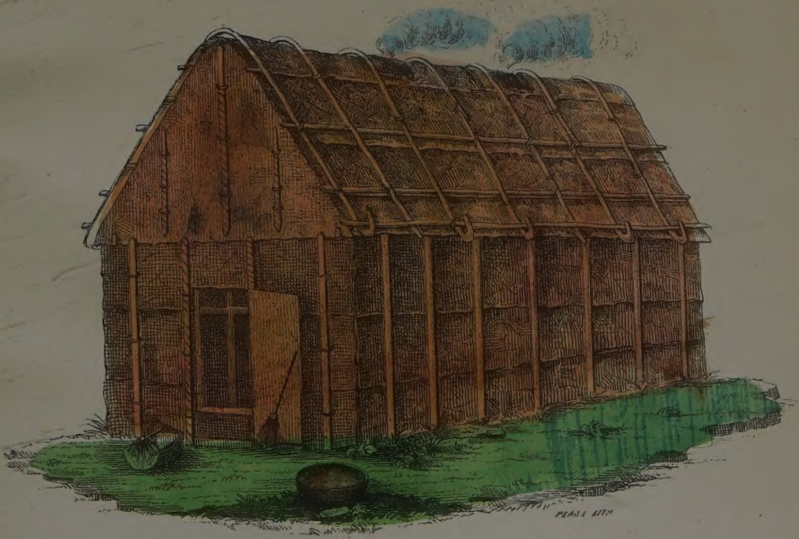


YÄ-WÄ-O-DÄ-QUÄ OR PIN CUSHION

Pl. 20.



Interior View of
BARK HOUSE.



GÄ-NÓ-SOTE
or
BARK HOUSE.